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CULTIVATING THE CHILD'S APPETITE

CHARLES ANDERSON ALDRICH

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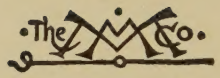

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CULTIVATING THE CHILD'S APPETITE

BY

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With a Foreword by

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FOREWORD

It is safe to say that no success in public health work has paralleled that of infant and child welfare in the past two decades. Where one infant dies today of gastrointestinal disease three died a quarter of a century ago. The intense interest of motherhood in this all important probem has made this possible. But the very arousal of this interest has brought with it too great an eagerness to attain the impossible—perfection—and too great a desire to have children conform physically to standards rather than to judge each as an individual. One of the most serious results of this attitude on the part of the mother is a loss of judgment, an overanxiety which results in an exaggeration of his importance in the mind of her offspring.

Probably the most common manifestation of this state is anorexia or lack of appetite, so common among the more prosperous families of our communities.

In calling attention to this common affection and analyzing its nature Dr. Aldrich is doing a

peculiarly grateful service to both laity and physicians.

He has accorded me the privilege of discussing this with him and I am assured that the views and results which he offers to his readers are sane, honest, and highly practical.

To some, all unpleasant news is abhorrent. To these this message is lost. But the vast bulk of mankind wish the truth unvarnished and unsugared; to many of these this little monograph will come as a veritable boon.

CLIFFORD G. GRULEE.

February 8, 1927

PREFACE

In presenting this work, the result of several years' observation and thought, I have not reviewed the literature on the subject completely and therefore no claim of originality can be made. In fact, I am indebted to many sources for most of the ideas expressed. To Dr. Joseph Brennemann and to Dr. Clifford G. Grulee I owe thanks for their inspiring teaching and kindly criticism. To Dr. Ralph C. Hamill who saved me from many psychiatric pitfalls and made many suggestions, I am also indebted. From many whose writings have taught what I believe to be the truth of the matter I have received valuable ideas and inspiration. I have freely taken hints from intelligent mothers and nurses. It is with a feeling of respect for the more conservative men who have raised their voices against the inconsiderate stuffing of calories into children, that I begin to write.

The conception of the hunger-appetite reflex as herein described I have not seen elsewhere expressed, although its integral parts are matters

of common knowledge. The material in the chapter on prevention, however, is the result of clinical research, and so far as I know, comprises the only statistics available on the subject. In this work, however, I was not entirely alone. Dr. William B. McClure, with whom I have often discussed the problem profitably, has made the same sort of survey. His methods were approximately the same as mine, and his results were similar.

Much has been said about *what* children shall eat. It is felt that a start needs to be made on the subject of *how* to get them to eat what we think they should, and that this should be firmly based on what we know rather than upon opinion. I have, therefore, tried to reason only from the pertinent scientific facts available and have made an effort to avoid, in so far as it was possible, the expression of unfounded personal beliefs.

It is somewhat difficult to write interestingly to the varied audience which naturally is concerned with this subject, to parents, nurses, child welfare workers, physicians, and psychiatrists. Since, however, coöperation between these groups is so necessary for success, we must all speak the same language. Fortunately in this subject the language need not be so technical but that all may understand. I have seriously tried to make available to the layman practically all that is gen-

erally known by physicians on the subject of appetite.

Lest any one think that I belittle scientific feeding methods, I take this opportunity of stating that, to my mind, no other procedure of recent years has met with such deserved success as has the modern care of children. Rather is this book an attempt to make proper feeding applicable to a large group of children who are at present being deprived of its benefit through their refusal to eat.

16. C.

CONTENTS

CHAPTER		PAGE
I.	THE PROBLEM	1
II.	IDEAL ACHIEVEMENT . . . . . Standards of Physical Perfection; Importance of Nervous Stability; Relationship of Appetite Problem to These Ideals.	7
III.	HUNGER AND APPETITE . . . . . Nature of Hunger; Nature of Appetite; Possible Combinations of Hunger and Appetite.	20
IV.	THE MECHANISM WHICH URGES US TO EAT Sequence in the New-Born; Sequence in Older Children and in Adults; Variations in This Sequence.	30
V.	TAMPERING WITH THE EATING REFLEX . Factors Acting on the Stomach; Factors Delaying Nerve Conduction; Factors in the Brain; The Results of Poor Appetite; Importance of Natural Reflex as a Gauge in Eating.	37
VI.	THE PSYCHOLOGIC FACTORS INFLUENCING APPETITE . . . . . Nervousness and Appetite; Characteristics of Child's Mind Influencing Appetite; Negativism; Desire to be Important; The "Big Stick" of Refusal of Food; Influence of Attendants Towards Meals; Number of Attendants at Meals; Different Kinds of People Attending Meals; Technique of the Meal; Pleasant Surroundings; Detached Attitude	44

CULTIVATING THE CHILD'S APPETITE

CHAPTER I

THE PROBLEM

If the general practitioner of thirty years ago had been told that within his lifetime infant mortality from feeding difficulties would be reduced to an almost negligible percentage in the better communities, he would have been incredulous. If he had been told that one of the major problems of pediatrics would be how to get children to eat, his incredulity would have been even greater. Yet these two statements are true today.

It is an interesting fact that advances in medical knowledge may bring in their wake new problems to be overcome, and that these difficulties may delay or modify expected benefits. Thus, for instance, the discovery and use of insulin has increased rather than decreased the number of diabetics living. Although a powerful method of treatment has been developed, the incidence of

the disease has not been reduced and many thousands of these patients are now alive who without insulin would have died. Likewise, recent advances in obstetrics may be expected to make its practice increasingly more difficult, because many babies born of mothers with pelvic deformities are now being safely delivered, whereas previously many of them have died. These babies may be expected to perpetuate strains marked by pelvic abnormalities which heretofore have tended to die out according to the law of the survival of the fittest. Modern scientific advance is attacking this law on every side, and in order to keep up with its inexorable demands we must constantly increase our knowledge.

Similarly, the science and art of feeding children has advanced so far during the present generation that few need now perish through failure to suit the diet to the child. Whereas within the memory of all of us the mortality rate of infants under one year of age was about twenty-five per cent., now, among our well-cared for people, the death of an infant from feeding difficulties is so unusual as to be almost a public calamity. One result of this achievement has been that many thousands of children poorly fitted at birth to withstand the rigors of life are now being reared to maturity. The physician, however, is not satis-

fied with mere reduction in infant mortality, and is now striving through proper hygienic and dietary measures to develop each child to his maximum of physical perfection. Some have even gone so far as to try to develop each child up to or beyond a theoretical average, or an erroneously called normal weight for age and height.

The unexpected factor acting as a check on the attainment of these ideals is the refusal of many children to eat the amount or kinds of food prescribed. One cannot state accurately the proportion of children who present this difficulty. Certainly the increasing number of references to it in the medical literature and in that of child welfare agencies is sufficient evidence of its prevalence. Actual statistics on this point are few, but Miss Mosely,[1] in an investigation made under the supervision of the Department of Home Economics of the University of Chicago, found among 100 children in homes of intelligent people only nineteen who ate heartily. At a recent meeting of the Chicago Pediatric Society this subject was thoroughly discussed. It was stated by various men that between eighty-five and fifty per cent. of the children who came to their offices presented the appetite problem in a more or less marked degree.

[1] Mosely, M. R.: Reaction to Food of Children of Pre-School Age. Thesis, June 1925.

All are agreed that among poor people the trouble is far less prevalent. It is rarely encountered among convalescents in hospital wards, and is almost never seen among healthy children in orphanages. But so widespread is the condition elsewhere that the word anorexia, hitherto a strictly scientific term for poor appetite, is now being used quite familiarly at the afternoon-bridge-table child-health conferences. In passing it might be remarked that anorexia is not a diagnosis any more than is fever. It is merely a symptom. Today it is not as logical to tell an intelligent parent that his child "has anorexia" as it was in the time of our fathers to say that one had "the fever."

This situation now confronts us. On the one hand are arrayed physicians, child welfare workers, parents, and nurses, armed with a knowledge of dietetics with which they think it possible to develop a generation physically superior to any we have yet seen in modern civilized countries. Opposed to this formidable array are the children, refusing to eat. At first glance the obstacle seems trivial, but experience soon disillusions one. A few attempts to force the bottle on an unwilling infant or a bout with an older child who has learned to use the regurgitation weapon when unduly urged, will soon convince

the most skeptical of the reality and extreme difficulty of the problem.

At the present time, generally speaking, the situation has reached this impasse and has gone no further. The result is that over the dinner table, parents and children are engaging in countless battles, from which the children are usually emerging victorious. Consequently we find many undernourished children who have developed marked behavior disturbances, and many worried, anxious, and worn mothers and nurses, not to mention irate fathers.

Nor can one blame child, mother, nurse, or father too severely. Proper technique of feeding children must be broadcast in definite terms before we can expect to achieve success in this difficult field. It seems unbelievable that such a condition can exist in these days of awakening interest in child welfare and child psychology without scientific investigation as to the cause.

For the most part we have made only a frontal attack on this resistance of the child. Not only has this attack been ineffectual, but it has been detrimental to both child and parent. It seems high time to call a halt that we may consider the feasibility of strategy or flank attack.

To be consistent we must consider the ideals we wish to achieve, and must investigate the

nature of appetite, its ally hunger, and the factors which influence them. Then we may be able to devise a logical plan for the prevention and treatment of anorexia.

CHAPTER II

IDEAL ACHIEVEMENT

In embarking upon this adventure of raising children, and more particularly here, of nourishing them properly, we cannot intelligently chart our course unless we have a fair conception of our ultimate aims. We are likely to fall short of these if we do not have a fair working knowledge of our shortcomings as well as of our advantages. We would set out on a wild and disappointing adventure indeed if we made our objectives impossible of attainment, and if they were too easy, there would be no zest in the cause. Therefore, a logical set of ideals toward which we may strive with a reasonable expectation of success would seem essential to any discussion of the problem just reviewed.

It may be stated that we have a reasonable right to expect to develop each child to his own maximum of physical perfection. We cannot, on the other hand, expect success if we try to develop every child to any general standard of perfection. Hereditary differences assure variations in

weight and stature which are beyond our control. It is in the consideration of the standards by which we may measure success that confusion so frequently occurs.

A mother recently consulted me because her fourteen months old baby was not gaining properly. She said he would not eat enough, and wanted to know if she should prevent his walking so that he would gain faster. I asked her how much he had gained since he was one year old and she said, "Nothing, but he hasn't lost." He weighed twenty-four pounds, was robust and active, just learning to walk. Since it is well known that normal babies at this age, with their increasing activity, may not gain for a few months, I was able to reassure her. When I told her that after the first year eight ounces a month was a satisfactory gain in weight, she was astonished. In this instance the appetite of her child was being ruined by forced feeding in an attempt to attain erroneously high ideals of weight.

Standards of Physical Perfection

At the present time the most popular methods of estimating achievement are physical examination of the child, and comparison with tables showing the average weight and height for age. These methods are in themselves fairly satisfac-

tory if such factors as family, environment, and habitus are also considered. By habitus we mean the natural build of the child, slender or stocky, etc.

As at present applied, in our school examinations, for instance, the use of these methods is, of necessity, too cursory. Particularly is this statement true of the physical examination. A complete physical examination, taking into consideration the structure and function of the body and of its component parts, implies that considerable mature judgment be exercised by the examiner. It implies considerable experience on his part. No matter how experienced he may be, however, mature judgment cannot be applied in rapid fire examinations as now conducted in most of our schools.

As a result, too much emphasis is likely to be placed on comparison with weight and height tables. These are of great value in helping us to estimate the attainment of a given child as compared with that of his neighbors. They give us little idea, however, of his attainment as compared with his own possibilities. Thus, for instance, if a given child is above average weight and height for his age, we have evidence that he is larger than his comrades, but still he may be below his own best possibilities in stature, or he

may be too fat. On the other hand, a child under the average weight may be below his neighbors in size, but actually be fulfilling his own greatest possibilities of stature.

Racial and hereditary factors enter into the problem. Confusion, perplexity, and disappointment are bound to follow attempts to make the child, under-average in size, exceed the stature with which heredity has endowed him. In this connection it would be extremely valuable to have weight and height tables which take into consideration the type of child. If we had two classifications only, one for the slender child of the asthenic habitus, and one for the stocky child, sthenic habitus, we could make much more accurate estimation as to the attainment of our ideals.

It is important to mention one other mistake that is commonly made in discussing weight tables. The word *subnormal* should not be used. From comparison with tables, it is right to say that a child is under average weight, but it is not correct to say that he is subnormal in weight. Other factors such as habitus must be considered before we can say that this is true. Theoretically, each child has his own normal or best weight. The difficulty lies in estimating with any degree of certainty what this is.

A fairly accurate method of determining

whether or not a child has attained his own normal weight is available in the consideration of his rate of growth. It certainly is not normal for a child to lose weight, or to remain stationary for any protracted period. Children who are under the average weight frequently maintain a rate of growth approximately that of the average. An increase in weight of five pounds yearly is considered average after the first year. If a child gains this much, strong evidence must be produced before a diagnosis of undernourishment or malnutrition is justifiable.

If, then, a child is free from physical defects and disease and maintains a normal rate of growth, he will have made a good beginning toward attaining his physical perfection. If he is successful in this, what difference does mere stature make? This decidedly secondary consideration seems to have been so over-emphasized that it has almost become the rule to use weight and height as measures of health. In this cart-before-the-horse complex lies one of the chief difficulties in our present feeding program. Attempts to make all children approximate given standards for age, weight, and height are not only futile, but they are positively dangerous to the physical and mental health of many children.

Let me illustrate. A child who had always been

considered well, and who had no marked behavior difficulties at home or in school, was given a health card from school stating that he was three or four pounds underweight. A physician was consulted who advised leaving him alone, as there were no marked physical defects although the boy was of the thin, wiry type. Not satisfied with this conservative advice, the mother went "shopping" until she found a doctor who said that the child was malnourished. (How awesome that word malnourishment has become! One conjures up Armenia and Russia during the war!) A well worked-out high caloric diet containing much butter, cream, and egg was prescribed. During the first few weeks the child gained a little weight, and all would have gone well except that whereas he had previously eaten well, he was now consistently refusing food. Spurred on by the initial increase in weight, mother, father, and grandmother redoubled their efforts to make him eat the prescribed diet. This insistence was met by more and more energetic refusal on the part of the child until meal time became a period of continual strife, the honors usually going to the boy. Spankings next appeared on the menu. One day after a stormy session, either accidentally or in a flash of inspiration, the child vomited his meal. The effect of this manoeuver on his attendants

was striking and was sensed immediately by the child. They feared this vomiting because it was evident that regurgitated food could not cure malnutrition. Brow-beating and spanking were stopped. Teasing, bribery, and tears were substituted. The boy immediately sensed the power at his command in the use of so potent a weapon. He now vomits if he does not get his slightest wish. He threatens to vomit if he is asked to finish his meal, and carries out the threat often enough to make it a "big stick." This boy, who, you will remember, was a happy, healthy, but thin child, is now peevish, wilful, and puny, and the end is not in sight. The parents burn midnight oil figuring out caloric schedules, beautiful ones containing 2000 bright and shining calories, to be refused or regurgitated at the caprice of their "problem child."

The fault is not theirs, however; it is to be found in the system now held in such popular esteem. If an extreme instance has been selected to illustrate this point, it is because a demonstration of serious results often brings to light insidious processes vaguely sensed but little noted in the management of our children. To a greater or less degree this same process is now going on in thousands of families. The sum total of unhappiness involved is enormous.

The futility of this system of caloric feeding is more evident when it is recalled that at the present time it is impossible to estimate closely the number of calories necessary for normal growth. Children vary tremendously in their ability to assimilate nourishment as well as in their ability to utilize it economically after assimilation. We have no practical methods available by which these factors can be measured. (See pages 41 and 42.)

I know twin boys who are almost indistinguishable from one another. They have always weighed exactly the same number of pounds and are of the same height. They play together at the same games, live under the same roof, breathe the same air, and eat the same sort of food; yet, one of them always eats ravenously, usually coming back for two or more helpings, whereas the other never asks twice for the same dish, and eats very lightly. If identical twins can vary as much as this in caloric intake and yet maintain an equal growth, it seems presumptuous to attempt to prescribe mere calories on the basis of age, height, or weight.

The foregoing does not intimate that average weight and height tables are useless. On the contrary, they afford one of the most practical

methods of estimating a child's statural achievement. The important thing to remember is that we must not, in thinking of his stature, forget the child, his heredity, general makeup, and environment. We must individualize on each or make many mistakes, and mistakes made on children are likely to have consequences far outside the particular field in which they happen. Discussions before children of structural defects and deficiencies resulting from poor eating, for instance, may lead to inferiority complexes and to phobias.

Importance of Nervous Stability

In striving to develop each child to his maximum of physical perfection, we must not forget that this includes a stable nervous system. If, as we are so often told, we cannot increase a child's sheer mental capacity, we can at least try to make conditions so harmonious that his innate mental ability may have the opportunity to develop to its maximum.

We are repeatedly told of the extreme importance of establishing serene child-parent relationships. At the present time, however, the prevalent strife between parents and children over their meals is exerting a damaging influence on

the attainment of this end. This conflict is our most serious obstacle to pleasant family relationships, because meals occur three times daily, whereas most of the other causes of discord, such as unwillingness to go to bed, to get up in the morning, or refusal to brush the teeth, or to take a bath, occur less frequently.

Moreover, since the problem of eating seriously involves so important a matter as the physical welfare of the child, emotions run high in dealing with it. An almost hysterical attitude is frequently exhibited by attendants at children's meals. I have seen nursegirls weep over their charges who will not eat (doubtless their positions depend to a large extent on their ability as calory stokers). Mothers pretend to cry, or say they will, if their children do not eat or drink their milk. Fathers wax irate over the untasted spinach and loudly aver that one cannot grow up to be a strong man unless spinach is consumed and that immediately. In the child's mind such happenings cannot but associate unpleasant ideas with meals.

We must recognize, then, in the eating problem a factor fraught with danger to the nervous system of the child, and we must not thoughtlessly initiate in conflicts over meals, lifelong strife with our children.

Relationship of Appetite Problem to These Ideals

In the realization of success in these resolutions, to try to develop each child to his own maximum of physical perfection and to help him to secure a stable nervous system, it has already been shown that the eating problem plays no minor rôle. The development of a good appetite is such a palpable aid in insuring an adequate intake of food without psychic disturbance that it ought to be trite to suggest it as a major aid in the successful management of children. Yet, neglect of this point is a common cause of failure in our best laid plans. Little attempt has been made *to develop appetite as an end in itself.* All the emphasis has been laid on caloric intake rather than upon the natural stimulus which insures adequate consumption of food.

Most children have extremely strong wills, and after their appetites have been spoiled cannot be forced to eat enough food to maintain their best nutrition. That there are some docile children who can be coerced into eating almost any amount of food, I am well aware. They are decidedly in the minority, however, and perhaps fortunately so, for it is probable that there is something lacking in their psychologic backbones, however calcareous may be their skeletal devel-

opment. I suspect that in the struggle for existence into which they will later be thrown these docile ones will be found doing the things they dislike, because stronger personalities dictate to them. These amiable children, moreover, through their enthusiastic parents, are a menace to our efforts to develop good appetites. Very innocently their mothers are apt to point out the physical excellencies of their sturdy children, and to extol their feeding methods to the world at large. On hearing this, the parents of children who will not eat because they must, grit their teeth, set their chins, and go home determined that what Mrs. Smith can do, so can they also. The resultant clashes do not have a beneficial effect on children's appetites or upon their nerves.

We ought to try to develop good appetites not only in order to increase the amount of food consumed by each child and to decrease the amount of emotional strife attendant upon meals, but we also should maintain sharp appetites in order that food may be properly digested. As will be later developed, the secretion of digestive juices is initiated by good and inhibited by poor appetite.

Lastly, we should take into consideration the fact that these growing youngsters have a right

to enjoy their meals, and we cannot justly deprive them of this, one of the chief pleasures in life. Every time I see a child scowl at the mention of eating, I have a feeling that he is being monstrously cheated—"gypped" he would say if he were of the school age. We are not doing the best for our children when we thoughtlessly adopt measures which deprive them of one of life's most fundamental pleasures.

CHAPTER III

HUNGER AND APPETITE

Before proceeding further into the study of how to get our children to eat properly, let us investigate the nature of and the factors influencing hunger and appetite, our two greatest potential allies. It has been assumed by many that the two terms are synonymous and that hunger is simply an exaggerated appetite. If this were true, there would be no use for the two terms. On the contrary, as I shall try to point out, hunger and appetite differ in their origin, in their immediate purpose, and in the factors which influence them.

At the risk of appearing didactic, it may be well to consult the dictionary. According to Webster, hunger is a sensation due to want of food. The same authority says that appetite is an inherent or habitual desire for gratification. An elemental difference at once appears: Hunger is a sensation, appetite a desire. Elaboration of our reference widens still further the difference between the two. Professor A. J. Carlson in his

monograph on "The Control of Hunger in Health and Disease," discusses at considerable length the interplay between appetite and hunger from a physiologic standpoint and emphasizes their points of difference.

Nature of Hunger

He states that hunger is a more or less painful sensation located in the general vicinity of the stomach. As secondary characteristics it has associated with it indefinite sensations, such as headache, feeling of emptiness, nausea, and weakness. A state of increased nervous excitability and an increased pulse rate are also physiologic accompaniments of hunger.

These sensations have been shown to appear synchronously with vigorous contractions of the empty or nearly empty stomach. The pangs of hunger vary in intensity with the amplitude of these "hunger waves or contractions," and much evidence has been produced to demonstrate the causal relationship between muscular contractions of the stomach wall and what we interpret as hunger sensations.

Ingenious devices have been used to show that the contractions occur at the time of hunger sensation. The most convincing of these is the use of a light rubber balloon which is swallowed into

the stomach with a small rubber tube attached. If moderately distended with air, this balloon, when its tube is attached to a recording apparatus, can be made to register graphically on a drum all contractions of the stomach wall upon it. At the same time the subject of the experiment is asked to record any hunger sensation by pressing a key. This experiment has been repeated many times by different men and is most conclusive in demonstrating that hunger sensation is concomitant with contractions in the stomach wall.

Varied and prolonged observations have been made as to the effect of many factors on the time and size of these recorded waves. They seem to be stimulated by emptiness of the stomach, by early starvation, by hemorrhage (sudden starvation), and by certain diseases such as diabetes and Addison's disease, which are characterized by metabolic starvation. They are inhibited by putting almost anything into the stomach, by the sight of food, by various emotions, pleasant and unpleasant, by fevers above 102 degrees, by smoking, and by pressure on the abdomen. They are independent of habit or memory influences for they occur in the stomach of the newborn infant who has never taken food.

They occur independently of any nervous con-

trol except that inherent in the stomach, for when all the nerves going to and from the stomach are severed, the contractions occur undiminished. This fact seems to place hunger waves in the same category with contractions of the heart muscle which also has an internal, self-regulating mechanism. It would be an interesting biologic problem to investigate the possible relationship between hunger contractions of mammals and the primal hunger activity of lower forms of life. Possibly the rhythmic engulfing movements of the ameba may afford the earliest evolutionary evidence of hunger activity.

Neither the hunger contractions nor their resulting sensations produce any flow of saliva or gastric juice, so their purpose cannot be to aid in digesting food. Hunger simply produces a consciousness of the need for food, and only thus aids in obtaining nourishment. Hunger contractions and sensations may be present in the absence of appetite.

Nature of Appetite

Appetite, on the other hand, is a pleasant desire for food, referred more or less accurately to the mouth or throat and having associated with it a memory sense of enjoyment.

The importance of memory or habit cannot

be overemphasized. What else can adequately explain the wide variations in appetizing foods eaten by different human races, nationalities, and families? The African Negro may lick his chops over a meal of crawling ants, but we are filled with loathing at the thought of such food. The Eskimo chews his blubber with zest but looks askance at European dishes. The European looks down upon our humble pork and beans, while we do not relish Scandinavian raw fish. My family does not eat sugar on tomatoes, therefore I have an aversion for such barbaric treatment of the fruit. My best friend cannot understand why I prefer pepper and salt to his sugar. Different human beings seem to like the kinds of food to which they have been accustomed, for which they have a pleasant memory.

We know of no physiologic cause for appetite analogous to hunger contractions, unless it be assumed that hunger itself has a stimulating effect upon appetite. Whereas this is probably true to a certain extent, it is equally true that appetite exists without hunger. The enjoyment with which most people anticipate dessert after a hearty meal amply illustrates this point.

The question of the existence of possible unknown physical stimuli to appetite is a fertile field scarcely scratched by research. We know

nothing of why we crave different sorts of food at different times. Yet it is common experience to desire meat after overindulgence in carbohydrates. Moreover, we know nothing of the sort of diet that man would choose if left entirely to his own devices uninfluenced by custom or habit.

My attention has been called to an interesting research problem being undertaken by Dr. Clara M. Davis [1] at the Mt. Sinai Hospital in Cleveland. She has allowed an exclusively breast fed baby of nine months, continuously to make his own selections from a comprehensive assortment of raw and cooked foods. She established the fact that this one infant at any rate, could voluntarily select a sufficiently nutritious diet not only to maintain a normal growth, but also to cure an early rickets. She noted that he ate more protein than we ordinarily think best to feed children and of his own accord took cod liver oil in appreciable amounts.

By some such experiment with a child uninfluenced by environment, it might be possible to throw light upon the problem of the physiologic stimuli to appetite. It may well be that unknown chemical conditions in the blood stimulate or in-

[1] Davis, Clara M.: The Self Selected Diet of a Newly Weaned Infant. Read before the American Academy of Periodontology, Aug. 1926.

hibit the desire for food. In fact it is hard to understand satiety unless we assume some such activity. Possibly relative increase in the carbohydrates in the blood may automatically stimulate a craving for proteins. At the present time, however, this is all pure conjecture.

Appetite we know to be increased by pleasant emotions, by the sight, taste, or smell of palatable food, by the memory of these, or by eating itself. It is decreased or inhibited by unpleasant emotions and memories or by the sight, taste, or smell of things which are unpleasant or disgusting, and by most illnesses, mental or physical. Appetite stimulates the secretion of saliva and gastric juice whether or not food is actually eaten. It serves then, not only to increase the amount of nourishment taken into the body, but also to aid in its digestion.

For purposes of easy comparison, these attributes of hunger and appetite have been arranged in parallel columns in the accompanying table.

Possible Combinations of Hunger and Appetite

Having in mind this brief consideration of the nature of these two principal factors leading to the ingestion of food, it is interesting to consider the possible eating results which could ensue from their four possible combinations: First, the asso-

TABULATION OF THE CHARACTERISTICS OF APPETITE AND HUNGER

	Appetite	*Hunger*
Definition	Desire for gratification A pleasant memory complex	A sensation due to lack of food A painful feeling
Location	Mouth or throat	Abdomen
Origin	Cerebral	Stomach contractions
Effects	Stimulates flow of saliva and gastric juice Makes us desire food.	Brings subject of food into consciousness
Occurrence	Dependent upon previous experience May be present in absence of hunger	Occurs in new-born who has never tasted food May be present in absence of appetite
Increased by	Taste, sight, or smell of good food, or by memory of these Pleasant surroundings, emotions, or memories Eating Physical well-being	Empty stomach Starvation Hemorrhage (sudden starvation), and some diseases, as diabetes
Decreased by	Taste, sight, or smell of poor food, or by memory of these Unpleasant surroundings, emotions or memories Mental or physical illness Satiety	Strong emotions of any kind Fever above 102 degrees Smoking Ingestion of any food or drink Sight of food of any kind Pressure on abdomen
Purpose	Ingestion of sufficient amount of food Good digestion of food	Awakening consciousness to the need for food

ciation of good appetite with normal hunger sensation; second, good appetite with reduced or absent hunger sensation; third, poor appetite with normal hunger sensation; and fourth, poor appetite with absent hunger sensation.

In the first instance it is quite obvious that there would be no feeding difficulties. In the second, while without hunger one would not expect to find great avidity for food, the presence of good appetite would undoubtedly make the maintenance of adequate nutrition an easy matter provided the proper assortment of foods was offered.

It is in the two latter groups, among the children who have poor appetites, that we would expect to encounter difficulties. As a matter of fact, it is exactly these two types of children who present themselves to the physician.

The first represents underweight children who have not eaten enough to maintain proper nutrition. It can often be shown that these children with poor appetites are hungry. They exhibit symptoms of hunger, such as irritability and fatigue before meal times, whether or not they recognize the sensation as such. Such children eat a few mouthfuls hungrily or gulp down a glass of milk, and having thus eased the pangs of hunger, refuse more food.

In the second group of children who have poor

appetites, we find those who have been urged, cajoled, or spanked into eating enough food to maintain good nutrition, but in whom hunger sensation is evidently not felt. Due to the fact that these children are forced to eat fairly good meals, hunger contractions in the stomach, if present, are not violent and do not register on the child's consciousness. It is possible that due to poor appetite, digestion is so slow that the stomach rarely empties completely, thereby preventing hunger contractions. In many cases it seems as though unpleasant associations and the resulting poor appetite act as a damper on the pangs of hunger. It is well known that a ravenously hungry man will lose all sensation of appetite or hunger if confronted with a telegram containing bad news. It seems reasonable that to these children the mere thought or memory of the dining room and its unpleasant scenes may be the "bad news," blunting their appetites and blocking off the recognition of hunger sensations.

It is clear that hunger and appetite are unlike but allied and that any consideration of eating habits should be based on a proper understanding of these two factors and of their normal relationship.

CHAPTER IV

THE MECHANISM WHICH URGES US TO EAT

A THOROUGH knowledge of the normal physiology of an organ helps us to understand the cause, nature, and results of disease processes affecting it. Just so, a thorough understanding of the normal mechanism which urges us to eat, will help us to investigate more intelligently the abnormalities of eating habits.

To say that we are naturally led to eat by instinct is begging the question. More specifically, by the application of known physiologic and psychologic facts we are able to explain why we eat. It is possible that such an explanation may suggest methods of treating poor appetites, but one cannot conceive of ways to strengthen weak instincts.

Sequence in the New-Born

What is it then, that makes the baby take his first feeding? He is born with the necessary muscles and nerve reflexes to allow him to suckle if a nipple is applied to his lips. If we assume

that the human brain is as adequately equipped at birth as is that of the kitten,[1] we may state that paths in the brain which associate the sense of smell, turning motions of the head, and sucking motions are present and in working order at birth. In addition to these, it has been demonstrated by Carlson that hunger contractions are present in the baby soon after birth. If we grant the ability of the baby to suck, to smell, to move his head about after food, and to feel uncomfortable if his stomach is empty, the following sequence of events may fill his stomach.

When the stomach is empty, contractions occur there which are relayed to the brain as painful or uncomfortable sensations. As to the actual presence of these we have ample evidence in the vigorous cry of the hungry baby. If, as normally, the baby is in close proximity to his mother, when he cries he moves his head around to find the breast, and makes sucking motions with his tongue, lips, and cheeks. We say that he smells food, and if the nerve reflexes present in kittens are also present in babies, the rooting around and the sucking motions are probably reflexes resulting from the smell of milk. At any rate, these combined activities of the baby inform the mother

[1] Tilney and Casamajor have established the fact that there is a close relationship between these paths in the brain of the new-born kitten. Archives of Neurology and Psychiatry, July, 1924, xii, p. 1.

that he wants food, and she provides it. The actual inhibition of milk is undoubtedly a simple reflex activated by the feel of the nipple, or by that combined with the sensation of fluids in the mouth. At the first contact of food with the stomach, hunger contractions stop and the cry ceases.

There are two possible mechanisms which may result in filling the baby's stomach. The following table outlines these:

TWO POSSIBLE SEQUENCES IN EATING REFLEX OF NEWBORN

(*A*) *Requiring mother's intervention*	(*B*) *Requiring no outside aid*
Empty stomach	Empty stomach
Hunger contractions	Hunger contractions
Discomfort	Discomfort
Cry	Cry
	Smell of milk
	Movements of head and lips
Mother's act in presenting the nipple	Securing of nipple
Suckling	Suckling
Satiety	Satiety

It will be noted that if we consider the first or simpler sequence as the only mechanism active in the newborn, we do not, in the beginning of life, attribute any rôle to appetite, nor is the eating reflex completed in the child, as the mother's activity is required to complete the cycle. If, however, we grant that the sense of smell incites rooting motions and suckling, we may recognize in this the first faint glimmering of appetite, and must concede that psychologic factors play a rôle even in the first meal of the human being. It is interesting to note that without the functioning of appetite, the baby could never be fed solely through his own activity, while in the presence of even so rudimentary a precursor of appetite as the smell-head-rotating-and-suckling reflex, it would be theoretically possible for the baby to feed himself.

SEQUENCE IN OLDER CHILDREN AND ADULTS

For our purposes, however, it matters little whether appetite enters the scene at birth or later. We know that its advent is not long delayed. The sense of appetite is composed of an infinite number of pleasant memories of tastes, smells, sights, and feelings. It develops rapidly during the first few months of the baby's life, and insinuates itself into the eating mechanism immediately after the point at which the sensation of

hunger enters consciousness. Therefore, the mechanism of eating in the older baby or in the adult appears to be as follows: Hunger waves give rise to uncomfortable hunger sensations just as we assumed to be the case in the nursling. Since it has been found by experience that food brings relief from these sensations, associated paths in the brain lead us to think of food. Appetite first enters the scene when we begin to conjure up good things to eat. Thoughts of how, when, and where we are going to eat naturally follow. Due to the activity of this appetite, the secretion of saliva and gastric juice is stimulated. Then we eat. Under normal conditions the result is a meal eaten under the stimulation of both hunger and appetite, the digestion of which is aided by a normal outpouring of digestive juices. By some unknown mechanism satiety stops our desire to eat. With the end of digestion, the stomach being again empty, hunger contractions start a repetition of the entire reflex.[1] So we eat over and over again to our endless benefit.

Variations in This Sequence

This sequence of events, which may be termed

[1] If research now being conducted definitely establishes the presence of hormones or other chemical substances in the blood which stimulate appetite, this reflex would have to be altered accordingly.

the normal hunger-appetite mechanism or reflex of eating, is not by any means the only one possible. I have no doubt that many people usually eat under the stimulus of good appetite only. Some people seldom allow themselves to become really hungry, yet eat well and heartily because of their good appetites, not at all deterred by the absence of hunger. It is not true, however, that one would voluntarily eat heartily in the absence of good appetite, no matter how hungry he might be. Hunger contractions cease with the first mouthful swallowed. Herein lies an important consideration, the predominating influence of appetite in controlling the amount of food ingested. Hunger in this conception sets the ball a-rolling but plays little part in either the kind or the amount of food consumed.

An incident recently occurred which well illustrates this predominating influence of appetite. I found it advisable, for purposes other than the usual nutritional ones, to prescribe a diet rich in fats and poor in some of the commoner starchy foods, to an eight year old child who had always been a feeding problem. Since this sort of diet has a tendency to reduce hunger sensations, I anticipated considerable trouble in getting her to take the food prescribed. To my suprise, however, after two weeks' trial, I was told that the child

was piteously begging for more food. Since the caloric intake exceeded that which she had been taking previously, and since fats tend to remain long in the stomach and to delay hunger sensation, the demand for more food could hardly be attributed to increased hunger. Her desire was stimulated, however, by the fact that she was refused her accustomed foods, and because all the portions she was allowed to eat were weighed out in her presence. She wanted more because she knew she could not have it.

In this chapter I have tried to picture a natural mechanism by which the race has been guided through all the ages to eat sufficient food. It must be assumed that some such adequate mechanism exists, else we could not have survived the vicissitudes of time and environment. If I am mistaken in the exact workings of the reflex, I shall be glad to defer to a more reasonable explanation. The important point to keep in mind, however, is that any consideration of eating habits must first recognize the existence of a primal eating urge with which it will be dangerous to tamper.

CHAPTER V

TAMPERING WITH THE EATING REFLEX

Any interference with this natural mechanism of eating, since it theoretically interferes with the ingestion of normal amounts of food challenges our attention. At what points is this sequence or reflex vulnerable? Theoretically it may be attacked at three points; in the stomach, in the nerves conducting sensations to and from the brain, and in the central nervous system.

Factors Acting on Stomach

Anything which tends to retard the emptying of the stomach delays the sensation of hunger and increases the interval between these succeeding waves or contractions which set in motion the hunger-appetite reflex. Poor mastication of food, eating between meals, and the eating of foods which remain too long in the stomach are important factors tending to retard stomach emptying.

The stomach begins to empty itself as soon as food is prepared for reception into the intestine, and one of the important steps in this preparation

is the division of the food into small particles. Therefore, poorly masticated food delays stomach emptying. Watch a child with a poor appetite *not* chew his food, and it will be apparent at once that his food will not be properly prepared for rapid digestion in the stomach. The hungry child is much more apt to use his muscles of mastication than is the child who has food forced down his throat. An equally important effect of poor mastication is the decreased amount of saliva produced thereby. Saliva is active in digesting starches for a considerable time after food reaches the stomach, and absence of this starch digestion may increase intestinal work and possibly lead to poor digestion of food.

Eating between meals obviously keeps the stomach full. This factor is of the utmost importance in inhibiting hunger sensations. (After all this theorizing about abstract things like appetite and hunger, we are at last coming to concrete problems). Many who would never think of allowing their children to eat between meals are enthusiastic about the mid-morning glass of milk at school. (See pages 65, 67, 113.) While it is difficult to generalize on such a subject, in the interest of good appetites it is theoretically wrong to allow the finicky eater to have any food between meals.

Foods which tend to remain long in the stomach delay the pangs of hunger. Among these milk, nuts, and fried foods take first place.

High fever, according to Carlson, inhibits hunger contractions even when the stomach is empty. This is one reason why we do not feel hungry when we are ill. It is quite probable that illness may retard hunger contractions also because of the slowing up of digestion which probably takes place during sickness.

Factors Delaying Nerve Conduction

Anatomically, interference with the hunger-appetite reflex would seem possible in the nerves connecting the stomach with the brain. Little is known as to the actual occurrence of such obstruction, however. Perhaps this factor may account for some of the cases of anorexia seen among sufferers from organic nerve disease, the feeble-minded, or insane. In addition, it is conceivable that this factor of poor nerve conductivity may play some rôle in the lack of appetite so commonly experienced in the ordinary acute or chronic infections. That unknown chemical factors in disease may inhibit nervous activity as well as other physical functions is possible. Such impairment would presumably tend to reduce the consciousness of hunger.

Factors in the Brain

Mental factors obstruct the functioning of the hunger-appetite reflex, mainly through their inhibiting effect upon appetite alone. We come then, headlong onto the factors influencing appetite. It is well to rein in sharply at this point, to survey the field, and to see what it means to inhibit our children's appetites.

The Results of Poor Appetite

Inhibiting the sensation of appetite means that all this well-regulated plan of nature's carefully timed rhythmic waves of hunger has come to naught. The reflex is cut just at the point at which it is becoming effective and productive of pleasure and good nourishment. It leaves children miserable and hungry whether or not they are conscious of the fact. It means that what food they eat does not enter their mouths under the best conditions for digestion since the normal outpouring of saliva and gastric juices does not take place. Moreover, it means that these children are "losing out" on one of the most natural and zestful pleasures of life, not occasionally, but three times a day as long as they continue to have poor appetites.

This destruction of appetite in many instances

may amount almost to a perversion, so that the child takes pleasure in his poor appetite. Since perversion of other pleasurable acts has taken so important a part in psychiatric considerations, I think it worth noting that we may be dealing here with a similar situation. A fundamental pleasurable act is certainly inhibited and may be perverted.

Importance of Natural Reflex as a Gauge in Eating

The more one studies the ways of nature in physiology the more one is bound to respect them. The more one thinks of the delicately ordered mechanism of hunger, appetite, satiety, and good digestion with which we are normally endowed, the more respectful one becomes. Those who presume to dictate the number of calories a child should eat cannot have this attitude toward the natural reflex.

Who would be so foolish as to try to regulate the number of cubic centimeters of oxygen to be inhaled per minute? Oxygen requirements are strictly analogous to caloric food requirements. Sufficient oxygen is necessary to carry on normal combustion in the body just as enough food calories are indispensable to the same end. The amounts of oxygen and calories required vary

considerably, due to many of the same factors, such as the temperature within and without the body, exercise, type of individual, etc.

The respiratory rate, you say, is regulated by an extremely sensitive chemical and nervous reflex which is automatic, so that we pay no attention to it. Has nature then, in the matter of eating, been less careful to provide an adequate mechanism? Did she just take a chance that man would learn how many calories he needed? Obviously, in that event you and I would not be here today. Nature is not at fault. She has provided the mechanism. It has worked successfully in the past; but today, in one class of children, it is failing. It behooves us to eradicate the specific cause of failure in these cases rather than to overthrow the natural law and try to assume to ourselves the power to regulate the function of eating.

All that has just been said about the analogy between breathing and eating applies, of course, only to quantity. It would be foolish to say that in our environment appetite could safely regulate the character of food. This might possibly have been true in bygone elemental ages, but the changes which civilization has wrought in our dietary make many unwholesome foods so attractive that they would shoulder out the more health-

ful ones if appetite were allowed full rein. Therefore we have to prescribe a choice of foods which we think will be beneficial to the child's development, just as we try to surround him with an atmosphere of pure, fresh air.

Try to regulate your breathing and see how laborious it becomes. Does not the analogy hold with eating? How *laboriously* all these children are eating! Good appetite makes a pleasure of this labor.

CHAPTER VI

PSYCHOLOGIC FACTORS INFLUENCING APPETITE

The fact that we have limited appetite so that it is solely a mental function, does not greatly reduce the number and variety of the factors capable of influencing it. Our five senses, continually referring sensations to the brain, may influence this memory complex in an infinite number of ways. So many are these, that only those acting most directly upon appetite can be considered in this brief discussion.

There are first, the purely psychologic influences acting upon the child's mind. These may be characteristics inherent in the make-up of the child and of those who surround him with their attention, or they may be psychologic influences brought to bear from without upon these characteristics. Secondly, there are many physiologic influences acting upon appetite. The most important of all these must be properly arranged and evaluated before we can have even a working knowledge of the subject. All the things which increase or disturb equanimity of mind must influence the keenness of the child's appetite. From

this standpoint, all that could be said on the subject of child psychology might apply here.

Nervousness and Appetite

We are told that the "nervous child" does not eat well. It is equally true that the child who does not eat well is likely to be nervous. This condition is often called "nervous anorexia" in medical and psychiatric circles. A psychologist might possibly devote this chapter to the influence of mental states on appetite, but I prefer to discuss the interrelationship between mental states and appetite. I have not the technical skill to suggest methods of altering obscure psychic conditions so that poor appetite may be improved. Perhaps I may emphasize the importance of such education by psychiatrists, and can indicate how some neuroses may be cured or prevented by improving the conditions which bring about poor appetites.

It should be emphasized that "nervous anorexia" is a vicious cycle. Poor appetite and its attendant irritations, unhappy meals, etc., tend to make children nervous. Nervousness and its resulting effect on the equanimity of the child's mind tend to destroy appetite. In many instances it may be difficult to tell which factor predominates or which one antedates the other.

If I did not believe that much of the nervousness and much of the unhappiness in children and their parents is due to difficulties resulting from the appetite problem, this book would not have been written. Time and again it has been possible to trace the earliest beginnings of negativism (that frame of mind which makes children want to do nothing they are told to do), back to refusal of the bottle in infancy. Over and over one sees children who use refusal to eat as a means of obtaining their selfish and often harmful ends. Endlessly one encounters parents whose pleasure in their children is destroyed by anxiety because they cannot get them to take what they think to be sufficient food. In one year three instances came to my attention in which mothers were confined to sanitaria because of "nervous breakdowns" precipitated by worry over this problem.

I mention these facts because I am anxious to make it clear that it is of as much biologic importance to have happy families as it is to have healthy ones. In fact, one is almost impossible without the other. Often a startled expression comes over a mother's face when in a routine history she is asked, "Have you a happy child?" It is as though she never thought of that in her anxiety to make her child fat.

Characteristics of Child's Mind Influencing Appetite

Having suggested the extreme importance of the whole field of child psychology, let us consider for a moment or two some general characteristics of human minds which influence the child's reaction to food

Negativism

It may be fairly stated that the average human being naturally reacts hungrily, like any other animal, when food is offered. He is eager for it. On the other hand, he is more or less endowed with that quality of mind which makes him want to do those things he is told he cannot do and to refuse those things he is told he must do. Witness the effect of prohibition. It therefore follows that if a child is told that he must eat, food immediately loses some of its attractiveness. He begins to revolt, not because he does not like food but because he has to take it. In the end, if coercion is continued, he revolts at the sight of food itself. Aversion which should have been formed against its method of presentation is actually felt toward the food.

With the victim of this affliction we must have sympathy. I keenly remember the revulsion of

feeling and the intense irritation experienced on the few occasions when my parents insisted that I eat more than appetite dictated. In the interest of good appetite, therefore, we must be careful to remember this characteristic of most children. An act which is naturally pleasant will become distasteful to a child if he is forced into it.

Desire to be Important

The second characteristic of the human mind which has a bearing on the appetite problem is that most of us want to be important. We want to be the center of some one's attention. The child soon learns that by refusing to eat he gets much more attention than he does by "being a good boy and eating his cereal." Not only does he enjoy being the center of attention at the table, but he enjoys being talked about afterwards. It is a distinction. "I am the peculiar boy. I don't eat any cereal." The consultation in the doctor's office may be a veritable orgy of satisfaction to him. I would like to be able to reproduce in a series of sketches or photographs the satisfied, complacent expressions that I can recall having seen on the faces of many such children. So common has been this experience, that whenever a mother begins to talk of appetite, I now send the child from the room.

The "Big Stick" of Refusal of Food

Children who have learned the trick of using refusal to eat as a means of becoming important, sometimes get to be tyrants in the home. They put their attendants through unbelievable antics to suit their whims. I recall one grandmother who, three times daily, danced and sang to victrola music. No one else would do but grandmother. She forgot her age and infirmities, not to mention her dignity, withdrew from all social engagements at meal times, and renewed her youth in song and dance—all because she thought the child would not eat unless she did so. I could never persuade her to the contrary. Thus is youth served today.

Let me illustrate again this bondage in which we are often held by such children. It happened that I called upon such a one at supper time. On entering the vestibule I was greeted pleasantly by father and mother, and by shrieks from the dining room at the word "doctor." I asked that we talk matters over quietly, and that the child be kept out of the room. This request was relayed to the grandmother who was trying to still the cries. However, scarcely had we been seated, when, amid great commotion and scuffling, appeared grandmother and child. Both

advanced or struggled to the middle of the floor, and then, *mirabile dictu,* the boy vomited his supper profusely and comprehensively. "There," said the grandmother, "I just wanted the doctor to see what goes on at every meal."

But the lesson to be learned was not only in this remark. I watched the expression on the child's face. All terror of the doctor was gone, all rage vanished. Never on the face of an opera singer answering encores, have I seen a more satisfied, almost benignant calm. His stunt having been successfully executed, he walked over, sat on my lap, and happily played with my watch. His desire to be the center of attention was completely satisfied. Grandmother, mother, father, and doctor were all there to see it and the cook to hear it. What more could a four-year-old want? But so wrapped up in the calory complex were these people that during the short interval of my influence they could not be convinced of the importance of psychologic factors in this child's vomiting. They rather thought I was the one needing mental care.

I do not think these instances funny. On the contrary, they are all sad tales, tales of psychic tragedies. Especially is this true when it is remembered that the cure is so easy as to be ridiculous.

I do not feel that these children are tyrants as much as I feel a sense of their misfortune. Physically and mentally they are being retarded by our mistakes in the technique of feeding.

Influence of Attendants upon Child's Attitude Toward Meals

If these inherent traits of the child are important, what effect have the varying mental traits of those who attend him upon his appetite?

Number of Attendants at Meals

To begin with, consider the mere fact that the child is usually influenced by two or three different personalities at his meals. Mother, nurse, cook, and father may all take a hand on occasion. The more difficult are his feeding problems, the more people take a try at him, all of them using different methods. All of them talk about his eating. Then, if you please, add to this confusion a rapidly changing sequence of nurses, and the reason why some children do not have good eating habits may become clear. Confusion often means poor appetite. No two of the various attendants may agree upon proper behavior or methods of feeding. How can they expect the child to have a normal attitude? As an extreme instance of this sort, I recall a four year old boy

who ate his meals in the presence of nine adults, all of whom took an interest in his behavior. I say he ate, but he merely swallowed part of what was put into his mouth when he was not looking. It was not until he was given his meals alone that proper psychologic handling began to have a demonstrable effect in stimulating his appetite.

In order to establish good eating habits in a child, a sensible pre-arranged plan or technique of feeding should be established. Only then may all of those actively engaged in feeding him cooperate with good results. It is always preferable, however, to have one person supervise meals.

Different Kinds of People Attending Meals

Secondly, even if the number of attendants is reduced, all sorts of individuals may influence children. Some are domineering, some too indulgent. Some are timid, some adventurous. Some are meticulous, some shiftless. Opposed to these various characters are the pliant, yet resilient minds of children reacting tremendously to suggestion, being indelibly grooved by experience. Largely by these reactions and groovings are their appetites being determined. Eating habits may be as different as are the factors which control them.

At one time a two year old boy was a source of

considerable trouble because, in spite of what I thought to be careful handling, he continued to be thin and puny on account of poor appetite. I spent hours with the family. The nurse and parents appeared to be intelligent and coöperative. After several months the parents came to me and declared that they had solved the problem in a change of nurse. They had found that the child had been handled as I had instructed only in their presence. The boy had been consistently frightened and was in a state of nervous fear whenever the nurse came into the room. With the removal of this influence, good appetite was speedily established.

Because of the different kinds of people who supervise children's meals, it is necessary that a proper technique of feeding be outlined so that the domineering mother may learn to check herself sufficiently; so that the timid one may learn how much to stiffen her demands. We must have a uniform purpose. Then we may be able to surround eating with an atmosphere which will tend to keep good appetites sharp and to improve those already dulled.

Education of Attendants

Both of these considerations, the number of and kind of attendants, bring us to the subject of education. Only by education can we accomplish

our desires on any large percentage of children. This education must be twofold. People must know some facts about dietetics, and they should know something of child psychology. The first can be learned in a few hours, but assimilating a working knowledge of the latter may take a lifetime and ruin a few children.

It is not the parent's fault that their profession is today the most poorly educated one in civilized communities. Opportunity has just begun to knock at their door. Even now, when many parents are intensely interested in the problem of child psychology, the multiplicity of opinions expressed on many subjects tends to confuse them. There is great need for unanimity of purpose and opinion on the part of psychiatrists and physicians so that these confused mothers may be able to get something practical from what they read or hear. Those who cannot reconcile the different viewpoints should have sympathetic understanding. Criticism of parents, so commonly indulged in by nurses, welfare workers, doctors and psychologists, should be limited to those parents who do not try to learn the truth.

If a working knowledge of child psychology is necessary for a full understanding of the appetite problem, shall our nurses study psychology?

Certainly they should. They are now studying it in a crude way by the method of trial and success or failure. Our children are the laboratory animals of the experiment. Lucky are we if our nurse learns easily and intelligently by this method. Is it not just as important that those who care for young children be educated in the fundamentals of psychology as that they know how to wash diapers? Is it not just as important that they know how to get children to eat the food they prepare as it is that they know how to cook it? If they are not able to study psychology in a book, parents should see to it that they are taught enough so that they may surround the child with the proper influence. If they are not intelligent enough to assimilate this simple instruction they are not competent for the responsible positions they hold. I wish some one would write an "Elemental Child Psychology for Nurses."

I do not think we should all try to be psychologists. In that event we would not have time to do our daily work. But we should know enough to be able to talk on or listen to the subject intelligently. Then we shall be aware of troubles ahead when the earliest symptoms are exhibited. We shall be able to apply preventive measures

which are always so much more successful than therapeutic methods. A small amount of reading on the subject gives a parent an insight into the viewpoint of the child which is in itself a preventive measure of no mean importance.

Technique of the Meal

Having pointed out the importance of surrounding the child with the proper psychologic background, and having indicated some of the general traits which tend to influence appetite, it remains to outline the proper conduct of the meals themselves.

Pleasant Surroundings

The entire process of eating should be decked with pleasant sights, words, and sensations, so that the child's thoughts of meals will also be pleasant. Attractively prepared food, interesting dishes, a pleasant room and attendants (these last not too attentive), all contribute their part toward making the meal time enjoyable.

The process of eating should never be put in the same category as brushing the teeth, bathing, and going to bed. Try to develop an "hurrah, let's eat" attitude toward meal time. This is not as easy as it sounds, but is an essential. Enthusiasm and ingenuity is sometimes needed in

carrying out this part of the program. For atmosphere I could advise nothing better than a visit to a large children's institution, an orphanage for instance. Meals are the "big times" of the day in such places. This is as it should be.

Detached Attitude of Attendants

The attitude of those who supervise children's meals should be detached and carefree, not hovering and solicitous. It is evident that by obeying this rule we avoid the danger of allowing the child to use refusal to eat as a means of obtaining special favors and attentions.

Story Telling

It is best not to tell stories at meal time. Stories are possibly permissible as a means of creating a pleasant atmosphere, but never should they be a reward for eating and they must not deal with that subject. Never say you will tell another one if he "hurries up and eats his prunes," for to do this is to court future trouble. Here the difference between good and bad technique is a mere shade, but all important.

While story telling is inadvisable among the younger children, in dealing with those of school age who eat at the table with grown-ups, *conversation* may be a decided aid in creating the proper

sort of attitude. Subjects should be chosen which are both interesting to the child and far removed from food. Never discuss eating. School, friends, football and other games, any sort of outside activity may be talked about with decided benefit.

No Strong Emotions

Strong emotions should never be evoked near meal time. In this we must be ever watchful. If a boy is likely to have a tantrum if he is asked to wash his hands or brush his hair before dinner, do not make him do it. This procedure may be open to criticism, but I am thinking of appetites and I insist that to have an emotional scene before meals is bad for appetites. Not only is it bad for appetites but we have seen that strong emotions also stop hunger contractions. I would rather have my child eat his meal with unwashed hands than have him refuse it entirely.

Accidents are occasionally happening at the table. Food is spilled and things are messy. Children procrastinate. All these tend to exasperate the attendant. These feelings must not be allowed to register on the child.

Give Moderate Helpings of Food

Plates should not be piled high with food. It is advisable to put so little on the dish that a

second helping will be welcomed by the baby and requested by the older child. The sight of too much food decreases appetite just as the sight of a little stimulates it. If a second helping is requested, it should be given reluctantly. Possibly a remark that he should not eat so much, or a grumble at the grocer's bill may help to get across to the child the idea that obtaining of food is difficult.

Avoid Too Many Services

It is often a good plan to serve a plate lunch. Many times a child with negativism will refuse to take helpings from the waitress. If he is served with all the different foods on one plate he has fewer opportunities to exercise this power of veto.

Handling of Refusal of Food

If a dish is refused it is often best to terminate the meal without comment. This rule should not be enforced when it is known that the child has a real aversion for the refused dish. Do not attempt to make a child with a good appetite eat foods for which he has developed a strong dislike. The unpleasantness arising over this effort may spoil the whole attitude of the child toward his meals. In my experience to make a child "eat everything so that he will like everything when

he grows up," usually means that very soon he likes nothing because his attitude toward meals has been changed from a pleasurable one to an antagonistic one. His appetite is thereby seriously menaced.

Children often refuse a particular dish or type of food purely through whim. If it is felt that this and not a true aversion for the food is at the root of the trouble, two courses of action are permissible, termination of the meal or ignoring its refusal. In my experience the latter has been most successful. Sometimes a clever attendant can overcome such whims by psychologic tricks. One of my children at two years of age refused all vegetables. After a day or two, the nurse brought him to me and said, "He won't eat any vegetables." At which my baby repeated, "I won't eat vegetables any more." I said, "All right, don't give him any." That ended the matter until a few days later when I found her feeding him a large dish of carrots. Upon inquiring how she had performed the miracle, she said, "Well, I just told him we were having *steak* for lunch and went out and put vegetables on toast and called it steak. He likes 'steak' fine!" Apparently the dislike in this boy's mind was for the word vegetable instead of for the taste of the food. Obviously such a method could not be used on an older child.

Avoid Argument

Do not argue with the children over their meals. The child often refuses in order to be important as has been mentioned. Therefore, argument on the subject is what he wants. Silence removes part of the zest in not eating.

Allow Only a Reasonable Time at Meals

It is wise to allow only a limited time for meals. If an occasional one is cut short because of dawdling over food it is not likely to occur often. The meal should not be hurried, but a reasonable length of time, about one-half an hour, should be long enough.

Set the Child a Good Example

Adults should be careful to eat as they wish their children to eat. Setting a good example is perhaps our most valuable method of education. I am told of a family of six children none of whom could or would drink milk. Investigation showed that the mother never drank it. In fact, she frequently and rather proudly told her friends how "terribly sick milk made her." Subsequent events showed that milk was not unpalatable or harmful to any of the children. They refused it because of the influence of the mother. Possibly some such reason may account for the dislike some children have for cod liver oil.

Avoid Disciplinary Measures at Meals

Do not haggle about manners. Good table manners can easily be taught later on. Early childhood is a time in which to develop good appetite and in which to reap the benefits that follow it; it is not a time in which to spoil the atmosphere of meal time by too much discipline or censorial talk.

Whatever disciplinary measure is necessary, let it be carried out. But do not talk incessantly about it either before or after its administration. Termination of the meal is the best disciplinary method applicable to meal time misdemeanors. This is true even if the child does not seem to mind being deprived of food. It is good psychology from the standpoint of appetite. If it is desirable to let the child know that you do not care whether or not he eats, what could demonstrate this better than the fact that you send him away from his meal? I long for the good old days when children were commonly sent to bed without supper as a punishment. At least these children did not think they could hold the "big stick" of refusal to eat over the heads of their parents.

If some of these suggestions seem impossible or undesirable of attainment in any given case,

remember that I am trying to establish a general technique that will be beneficial to appetite. No general rule can apply to all children. An attempt is made to show the things which tend to improve the attitude of children toward their meals. Anything which will do this will tend to make children eat sufficient food to maintain good nutrition.

CHAPTER VII

THE PHYSIOLOGIC FACTORS INFLUENCING APPETITE

While in the preceding chapter I have emphasized the great importance of psychologic factors in stimulating appetite, I do not want to give the impression that physiologic considerations are of slight importance. It is quite evident that things which stimulate general good health may indirectly benefit the child's state of mind and digestion and so increase his appetite, provided it has not previously been taken away from him by poor psychologic handling.

Direct Effect of Hunger on Appetite

In the first place, since hunger is the natural stimulus under which appetite develops, it follows that all things which tend to vary the sensation of hunger may have a corresponding influence on appetite. Most of these have already been mentioned. It remains to consider methods for insuring early and complete emptying of the stomach so that hunger may be felt at the proper time.

Food Rich in Fats

In this regard it is important to avoid eating too much of foods which tend to remain too long in the stomach. In general, all those rich in fat pass out of the stomach slowly. This is because, in the heat of the stomach, fat, whether solid or liquid when eaten, spreads out in a thin film over the globules of solid food. Since the stomach is poorly equipped to digest fats it takes the gastric juices longer to prepare (liquefy) such food for entrance into the intestines, and stomach emptying time is delayed. All fried foods and nuts have this effect, and this is the principal physiologic reason for withholding them from a child's dietary.

Amount of Milk

Milk, innocent as it sounds, is one of the foods most slowly to be passed out of the stomach. (See pages 38, 67, 113.) This is partly because of its fat content, but mostly because of the tough curds which form immediately after it comes in contact with gastric juice. This is particularly true of raw, unboiled milk. Bringing it to boil makes the curds subsequently formed in the stomach much smaller.

Shall we, therefore, restrict the amount of

milk? The question of the amount of milk necessary to promote normal growth has lately received a great deal of attention, mainly, I suspect, as the result of clever advertising methods by the milk producers. Milk is almost, not quite, an essential in the feeding of nurslings. Its necessity, however, decreases with the age of the child, so that by the second year it is less important, and, in exceptional cases, it can even be largely dispensed with. It is sometimes necessary to nourish even babies without milk. Milk is a desirable food for all children whose appetites are good, but it is not sufficient as a complete diet after five or six months.

Because milk delays stomach emptying and interferes with the hunger mechanism which we are anxious to stimulate, I seriously question the advantage of pouring milk into unwilling eaters. In our zeal to nourish children we may find excessive feeding of milk the path of least resistance, because the baby, used to this food, continues to take it and refuses new foods when offered. Mothers of such children say they do not know what they would do if it were not for milk. As a matter of fact, if the milk were withheld, the child's hunger and appetite might soon assert themselves and result in the eating of any food available.

Intervals Between Meals

A long interval should always intervene between meals. In this way only can we be sure that hunger sensation will be keen. It is usually considered that five hours is the best interval between the meals of a child over eighteen months of age. The question previously referred to of the advisability of the mid-morning glass of milk again comes up here. (See pages 38, 65, 113.) In many schools it is the practice to supply a glass of milk to those children whose parents request it. This may be a good thing for the child who eats well, but on practical and theoretical grounds it is a bad thing for the one who has a poor appetite. A glass of milk taken at half-past ten or eleven may remain in the stomach until lunch time and thus prevent hunger contractions.

Chaney,[1] in a study of underweight children in California, put this question to the test of clinical experiment. Half of the children were given a glass of orangeade, and half were given a glass of milk in the mid-morning. It was found that those who had the orangeade gained appreciably more weight than did those who had the milk.

[1] Chaney, M. S.: Comparison of the Value of Milk and Oranges as Supplemental Lunch for Underweight Children. Amer. Jour. Dis. Child., 26, 337, 48, October 1923.

Since milk has a much higher caloric value than orange juice, it seems probable that the milk so greatly reduced the appetites of children for their lunch that the net result of such procedure was a loss in caloric intake, at least as compared with those observed in the orangeade group.

Food given between meals should be such that it can be easily and quickly digested. Fruits fulfill this requirement nicely. It is, of course, not necessary to prohibit between-meal nourishment in the child who always eats hungrily.

Starches and Sweets

Much clinical evidence is offered that excessive use of sweets and starchy foods tends to destroy appetite. As these foods are quickly passed out of the stomach, it is hard to see in what way they can inhibit the hunger mechanism. One would rather expect from what we have learned of appetite that they would tend to increase it since they are in general pleasant and palatable. It is possible, as Carlson suggests, that in some way appetite may be influenced by the amount of sugar available in the body. In this event, flooding the system with a large supply of easily available sugar as by giving excessive amounts of starches and sugars might be harmful to the appetite. Probably the importance of these substances in

decreasing appetite has been over emphasized. If they are not given between meals and are not given to the exclusion of other foods, I doubt their harmful effect. This sentence, however is a big "if" and must be remembered. Sweets, if given, should come at the end of the meal.

Protein and Meat Extractives

Proteins, especially meats, are supposed to stimulate appetite. All foods with savory or appetizing odors have the same effect. These are probably effective by direct action on the brain through the senses of smell and taste. Not only do they increase appetite, but it has been demonstrated that when in the stomach they increase the flow of digestive juices apart from their influence on appetite. Broths and meat extractives particularly seem to possess this faculty and are therefore used in the first part of the meal.

Fresh Air and Exercise

In so far as fresh air, exercise, and good hygienic surroundings tend to raise the general health of any individual they should increase his appetite. Exercise may have a beneficial effect on hunger and appetite because it burns up available calories. It may thereby stimulate the desire to

eat through some hypothetical chemical-nervous control as suggested above under *Starches and Sugars.* A period of rest, however, should intervene between strenuous exercise and the meal.

I do not want to say anything which will seem to detract from the importance of these as general measures essential to good health, but I would like to point out that they cannot influence an appetite which is gone. Many of the children we are treating and talking about literally have no appetite. In its place they may have an actual aversion for food. We cannot stimulate anything which is not present. This accounts for the many children who, although given all the benefits of these necessary factors, nevertheless do not eat. This applies to a consideration of the possible benefits to be obtained from many of the following factors.

Cod Liver Oil, Vitamines, Sunshine

Cod liver oil, vitamines, and ultra-violet rays (either natural or artificial) may increase appetite. We know nothing as to the mechanism by which they do this but much clinical evidence speaks in their favor. Experimental animals on a vitamine-free diet, eat so little that they often starve themselves to death, whereas if vitamines are added to such a diet, they again begin to eat.

The experimental evidence regarding ultraviolet rays and cod liver oil, while not so conclusive, makes it appear that these are as a rule beneficial. Whether the action on appetite is direct or indirect cannot be told. In any case of anorexia, therefore, these measures should be given a thorough trial. They have at least decided nutritional merits.

It is well not to be too enthusiastic on this subject, however. Cod liver oil in rare instances seems to decrease appetite, because of its high fat content, a food idiosyncrasy, or a natural aversion to its taste. Vitamines have been greatly overexploited by commercial houses. If lack of vitamines is the principal cause of this anorexia we are talking about, why should we encounter the condition precisely among those children who get the largest percentage of vitamines in their food? It is among the children of the well-to-do, who can afford to and do buy such food, that we find our trouble most prevalent. If supplying vitamines was the sole or most important method of treating this condition we would not be considering it at all. Our task would have been completed long ago.

Tonics

Other tonics, especially those containing bit-

ters, have been given from time immemorial to stimulate appetite. Carlson has demonstrated that these have no effect on hunger. Therefore, what effect they may have must be directly on appetite. Clinically in children their use is disappointing. Children do not appreciate, as do some adults, that "the stronger the medicine the greater is its efficacy." In general it may be said that tonics have been tried and found wanting. The prescribing of any medicine, moreover, to a well child may do him real psychic harm. Therefore, until tonics have been demonstrated to be of real value they should not be administered.

Overfeeding

Temperance in eating habits tends to stimulate appetite and intemperance to destroy it. This is most easily demonstrated in our appetite reaction to foods which, at first enjoyable, later become loathsome through overindulgence. I still shudder at the thought of a certain kind of ice upon which I was allowed to feast one day as a child. Appetite for a food is likely to be in inverse proportion to its availability.

Overfeeding of the infant, then, tends to destroy his subsequent appetite. In this we find a potent argument against the neighborhood baby contest. It is almost impossible for the conserva-

tive physician to keep the mothers of the smaller babies from trying to force food upon their infants. They want to make their children of small capacity big and fat, like the wonderful "bouncing baby" that is most admired on the block.

Those who raise animals have long since learned this lesson of temperance. I know of a successful breeder of silver foxes who instructs his men immediately to reduce the ration of any animal which does not devour his food hungrily and forage around for more after his meal. Only when this period of restlessness after meals is unduly prolonged does he allow an increase in the diet. He has found that by so doing the ultimate amount of food eaten by the foxes is increased. It means dollars and cents to him to produce healthy animals. It is often true that live-stock breeders take up advances in medical knowledge more quickly than do those who bring up children. From earliest infancy the baby should be given a meal which he will finish hungrily. Theoretically his appetite should never be completely sated.

Constipation

Daily and sufficient evacuation of the bowels is probably important in maintaining good appetites. This is for two reasons: First, proper

elimination tends to reduce putrefactive processes in the colon and the absorption of the harmful products thus formed; and secondly, good motility in the bowel probably helps the stomach to empty promptly. To this end proper selection of laxative foods, such as fruits, vegetables, and rough cereals, must be made. If necessary, special methods of combating constipation should be tried in cases of anorexia.

Food Idiosyncrasy

It should be mentioned in passing that occasionally an idiosyncrasy against one particular food may give rise to poor appetite. It is almost as though the child were poisoned by such a food. There is no accounting for such happenings, and no way of preventing them. It is always well to bear in mind this possibility, however, because removal of the offending food will cure the disease. Proteins are usually considered the most common food to do this, but I have seen two or three children who refused everything if they were allowed to have as innocuous a food as orange juice.

Teething

It must be remembered that teething, because it sometimes causes swollen and tender gums, is

a frequent cause of temporary poor eating. In a few cases that I have seen, the process was so prolonged that it was the principal cause of chronic poor appetite. Sometimes anorexia may be an indication for lancing gums that the teeth may come through and the swelling subside.

CHAPTER VIII

APPETITE IN PHYSICAL DISEASE

Until now little has been said about the effect of disease on appetite. Acute and chronic disease is the most common cause of *temporary* loss of appetite. Because of this fact we shall see that it also plays an important rôle in the production of *habitual* lack of appetite.

Objections to the Physical Disease Theory of Anorexia

I find serious objection, however, to the view that chronic diseases of various sorts are the principal causes of habitual anorexia. This objection is based on both theoretical and practical grounds. The peculiar distribution of the cases among well-to-do families seems to be an almost insurmountable obstacle to the contention that anorexia of this type is due to chronic disease alone. It is hard to understand why, in that event, it is not much more prevalent among the poor.

Among the diseases directly causing temporary

loss of appetite may be mentioned all acute and chronic infections of the nose, throat, and intestinal tract; organic disease of the heart, lungs, and kidneys; urinary tract infections; jaundice; disease of the central nervous system; acute infectious diseases; such specific infections as tuberculosis and typhoid; malignant tumors; anemias; and imbecility. Obviously any attempt to do more than mention these would be beyond the scope of this work. If we accept diabetes as the shining exception that proves the rule, we may almost state that all diseases cause lack of appetite.

It should be mentioned, however, that of all these conditions, diseases of the nose and throat are overwhelmingly more important in causing poor appetites. This is because of the relative frequency of such infections and of their location in the general vicinity of the organs of taste. It has been stated with some justice that 90 per cent. of the diseases of children have their origin above the neck. Therefore, the common cold, influenza, and the other frequent affections of the nose and throat must be thought of immediately in connection with the symptom of poor appetite.

Of late it has become popular to suppose that nasal sinus infection is the cause of a large number of obscure complaints. Among these,

anorexia has frequently been named. Enlarged or diseased tonsils and adenoids have been assumed to be the cause of a majority of the cases of anorexia.

Delayed emptying time, various positions, and secretory abnormalities of the stomach have all come in for their share of the blame. But this organ tends to be low and to empty slowly in all patients with poor muscular development, especially in those of the slender type, and poor appetite in itself causes a decrease in the amount of gastric juice secreted and therefore may delay stomach digestion and its emptying time. Since many of such gastric conditions are known to result from anorexia, I do not see how they can also be claimed as its original cause.

In considering the importance of physical disease in the chronic appetite problem, I turn to my experience and find that relatively few of the children presenting themselves have been sufferers from physical disease adequate to cause the trouble.

If any one or all of such causes are to blame for this widespread condition, I recoil at the thought of the work we doctors have before us. Think of the stomachs we must raise and lower. Think of the hydrochloric acid and soda to be prescribed. Marvel at the bushels of tonsils and

adenoids we must remove. Calculate, if you will, the number of throat specialists it will take to drain these countless sinuses. And then call on your reason to test the two hypotheses: first, that anorexia results from an interference with the hunger-appetite reflex due to improper technique of feeding (the physio-psychologic theory); and second, that anorexia, a symptom found almost exclusively among our well cared for children, is due to chronic disease (the physical disease theory).

Only yesterday we were making rounds with Dr. Brennemann in a convalescent ward of the Children's Memorial Hospital. We asked the head nurse if all the children ate well. "Do they!" said she. "You should see them come back for more. They always eat well." This could hardly be said of any similar group of "well cared for" children nowadays. Relatively few patients with chronic anorexia appear in our free dispensaries. It is simply unbelievable to me that children surrounded with all the advantages that money and science can accord today are actually suffering from physical disease more than are those of the poor. Mortality and morbidity statistics point to the opposite state of affairs. The highest mortality rate is found among the poverty stricken. Why is it

not as reasonable to suppose that the physical defects or diseases found in cases of anorexia may result from the poor nutritional state consequent upon it, as to think that they cause the poor appetite?

How Physical Disease Commonly Influences Children's Appetites

Yet, in spite of these strong arguments against the theory that physical disease is the direct cause of habitual poor appetite, I consider it one of the most important links in the chain of events which leads up to the condition. Often it is the first cause, chronologically, to appear. As a result of infection of any kind a child may temporarily refuse food. At this time, attempts to urge or to force him to eat may result in aversion for food in a child previously delighted at eating. Such instances are a part of every day experience. Let me illustrate from today.

A mother phoned to report that her baby was not eating well, in fact, he could not be forced to take the bottle. Just then, while fighting over it, the baby had gagged and what milk had been forced down had come up through his mouth and nose. She was not quite sure about the ears. What should she do? Until a few days ago he had drained every bottle. Upon questioning, it

developed that the child had a cold "which didn't amount to anything." Beyond a doubt the cold was the cause of the baby's first refusal of the bottle. It was right in the baby under such circumstances to refuse his food. Nature saw to the working of that reflex. Man, so confident, in his little knowledge, tried to interfere. The result was a fight with the honors going to the baby. You just cannot make a baby who will not suck, take much food from a bottle.

But to return to our baby who has just vomited all his milk through mouth and nose. What of his psychological reaction toward food at this time? He has had a fight over it and is mad. It has choked him and made him throw up for the first time in his life; he is scared. It has gone down his windpipe, making him cough and choke some more. It has soaked his clothes and filled his eyes and ears. Probably the acid in it made his eyes smart. Of course he does not like food. When the bottle is next presented to him we shall be lucky if he does not set up a yell and fight with all his might. Repetition of such events may be the basis of established aversion for food in this baby.

Thus does physical disease influence our appetites. It should be more generally known that the common cold causes poor appetite. This anorexia

should be respected. One of nature's methods of sparing the body during illness may be a reduction in food intake. Not only is lack of appetite one of the symptoms of a cold, but in many instances it is the earliest one. A few years ago while in Boston I had the opportunity of studying the records of many nurslings in a hospital ward. These records stated the amount of food refused by each baby at each feeding. In almost every instance in which a previously hungry baby began to refuse part of his feeding, trouble was brewing ahead. This usually took the form of an ordinary cold. So constant was this finding that the nurses were often able to predict the onset of a cold before any other symptom appeared. We ought to consider the first appearance of anorexia as a premonitory sign of illness.

I do not want any one to think that there are no cases of anorexia due to chronic disease. On the contrary, there are hundreds of children who suffer from chronic disease and who therefore have poor appetites. But for every hundred of these there are thousands with poor appetites from other, less demonstrable causes. It is of these thousands that I am speaking.

CHAPTER IX

PREVENTION

The previous discussion of the nature of this problem and of its controlling factors naturally would be barren without some suggestions as to treatment and prevention. To my mind and to that of most medical men, prevention of any disease is a more important subject than is the treatment of the established case. Particularly is this true of the appetite problem. If proper methods of prevention were generally used, I believe the problem would vanish into thin air with the expenditure of relatively little effort. To treat successfully the total number of cases that could thus be prevented, however, would require an army of doctors, nurses, and psychiatrists such as has never, and I hope, will never be seen. Moreover, the cured case is left with physical and mental scars, whereas the child who escapes untouched has no such defects later to combat.

However, I realize that mothers of children who will not eat are likely to be impatient at talk

of prevention. They want to know what is to be done about their own children. I trust that such people will patiently bear with me through this chapter because of its importance as proof of the nature of chronic anorexia. In it the theory has been put to the test of clinical experiment. If the results here shown in prevention are good, then the theory suggesting the methods used is, in all probabilility, sound. In that event the reader will be able to tread on firmer ground through the chapter on treatment.

The following preventive technique is probably incomplete and will later need supplementing. I have tried to arrange the subjects in chronological order.

Propaganda

As the first and most important means of preventing poor appetites, education as to the true nature of chronic anorexia is proposed. To be of any real value, information should reach nurses, doctors, welfare workers among children, and prospective parents. It will be less valuable if it reaches a mother after the habit of refusing food is established in her child. The frank purpose of this work is to provide a text in which such information can be found.

In addition, the doctor on his first visit to

see a new-born baby, should mention the problem and its prevalence. He should request the nurse or mother to report loss of appetite as quickly as she would report vomiting, diarrhea, or failure to gain in weight. In this way only will he be able to treat successfully the first attack of anorexia.

No Forced Feedings

In the propaganda just mentioned, it should be emphasized that no child should be forced to eat without careful consideration of the possible consequences. I never instruct nurses or mothers to urge or force food on well children, and it is seldom that I do so when they are ill. The case against forced feeding rests upon the fact that it has been thoroughly tried and found futile as a means of insuring adequate food intake, and harmful to the peace of mind of the household. Even if it were true that all children could be made to gain satisfactorily by this method (and I do not grant this), I would still feel it a mistake. The psychic harm done as a result of conflicts over meals far outweighs in importance any possible physical gain which could be made. I would rather have a child thin and happy over his meals than fat and unhappy or contentious three times a day.

Prevention in the First Few Days of Life

During the baby's first few days, under natural conditions, little or no food is provided for him. The reason for this is unknown. He often seems hungry, but nature has provided no food. During this time some babies quite definitely need water and we now furnish this as a matter of routine.

It has recently been maintained that they also need food, and under the stimulus of that idea it has become common in many hospitals to provide a supplemental food for new-born infants during the period before the flow of breast milk is established. Various foods are used, either milk dilutions or solutions of some sort of sugar in water.

It seems to me that this practice is undesirable because it interferes with the development of hunger by keeping the stomach partly full of food. The baby who has his hunger appeased by any sort of bottle food during the first few days will be less eager for the breast. It is almost axiomatic that he will nurse less vigorously. He may even prefer the bottle to the less easily managed nipple of his mother, and thus present an appetite problem at birth. As a routine, nothing but water should be given to a new-born infant until after the secretion of mother's milk has begun. Premature, congenitally weak, or diseased infants are obvious exceptions to this rule.

Bottle and Spoon Education

As the second step in prevention we take an apparent about-face. Just as withholding the bottle in the first few days is the first step in developing good appetites, I feel that the presentation of the bottle during the first month of life should be the second move. This is because it is desirable that the baby accustom himself to the feel of the rubber nipple and to the taste of artificial food before his appetite is formed for breast milk exclusively. Since appetite is a memory complex, we would expect no child to have an appetite for the bottle who had never tasted it. We therefore should give the bottle occasionally while hunger is the main stimulus to eating. In this way the baby will most naturally develop a pleasant memory of artificial food.

This bottle is not given as a food. If the breast milk is sufficient in amount it is all that is necessary for the proper nourishment of the baby during the first three or four months. But as an educational procedure aimed at the maintenance of a good appetite later on, early bottle feeding is of great importance, as recently emphasized by Dr. Brennemann.[1] This milk should be given at least once or twice a week so that the baby will

[1] Brennemann, Joseph: Some Neglected Practical Points in the Technique of Infant Feeding. Archives of Pediatrics June 1923.

not forget it as time goes on. Water may be given daily in the bottle for the same purpose.

Likewise it is advisable to begin feeding cod liver oil in the spoon during the first month. We can thus educate the baby's taste for this food so that later on he will like it if it becomes necessary for his best physical development. Orange juice similarly may be fed to most infants during the first few weeks.

Prevention of Weaning Difficulties

These considerations naturally lead to the weaning period, a dangerous time for the developing appetite of the baby. Weaning may take place at any period during the first year. It may be a sudden or a gradual process, according to factors mainly beyond our control. From the standpoint of appetite we prefer to have it gradual and should plan our feeding campaign to that end. If this is done there will be few sudden changes which give the baby opportunity to refuse food.

If a baby, approaching the weaning period or suddenly faced with the necessity of artificial feeding, has previously been educated to take the bottle, no great difficulty should be experienced. If this has not been accomplished, he may refuse artificial food. This is a distressing situation,

serious from the standpoint of his immediate nutrition as well as from that of his future appetite. I know of no more difficult problem than successful presentation of the bottle to an unwilling baby who has previously been exclusively breast fed for several months. Such children may lose pounds in the process of weaning and emerge from the struggle with an extremely unpleasant mental attitude toward food. In the older child it is frequently possible to trace the onset of anorexia back to the weaning period. Early and continuous education with the bottle will obviate this source of trouble.

When faced with the problem of refusal to take artificial food at this time, I have found it more successful to take rather drastic steps and allow the baby to become acutely hungry before offering him any food than to try gradual reduction of the food. It is well to offer such a baby, after a preliminary starvation of eight to twelve hours, two ounces of skimmed milk only. If, as is usually the case, he takes this milk and seems hungry for more, three ounces may be allowed at the next feeding. The ration should be gradually increased, making an effort to lag behind the child's appetite in the amount of food offered. In this way, after a few days, our conscientious objector emerges a wiser though hungry child

with a good appetite. If the full bottle is continually pushed, squeezed, and squirted at him until the entire contents are emptied in or around him, he emerges from the weaning period with no appetite at all and hungry notwithstanding our attempts to feed him.

Prevention of Objections to Change of Food

When I read Robinson's "The Mind in the Making" and came to the passages in which he emphasized the natural conservatism of the human mind, I immediately thought of these "stand pat" babies. Almost all babies resent changes, whether they be changes of food, attendant, or clothing. If we are going to develop in the baby a pleasant concept of food, it is important that changes in the character of his food do not give rise to unpleasant struggles.

The subject has just been covered concerning the bottle feeding, but there are other foods which we consider it necessary to feed young infants. Cereals, vegetables, and soups are usually introduced before the first eight months are over. Prevention of poor appetite will naturally include the proper technique of introducing these foods. The following system has few sudden changes.

After a few weeks or months, cereal should be included in the bottle formula. It is a simple

matter to cook a tablespoon of farina in the water of the formula and to use this gruel as a diluent of the milk. This change rarely elicits a protest and is apparently unnoticed by the average baby. At from four to seven months, cereal should be given to the baby in a spoon. It is best to pour some of his old, familiar bottle feeding over it. As a rule, if the mother is tactful, this spoon education is easily accomplished. It should be emphasized that only one or two spoonfuls be offered at the first attempt. The amount is then increased gradually. This part of the technique is especially easy if the baby has already been getting cod liver oil from a spoon. A small amount of sugar may be added to the cereal to make it more palatable, but this is rarely necessary.

After this spoon education, vegetables may be added to the diet. This is a much more radical change as the difference in taste is much greater than any he has experienced before. It is especially important that he be given plenty of time to get used to each new taste before an attempt is made to feed him any large amount. One vegetable should be given over a long enough period (usually one or two weeks), to accustom him to its taste before the baby is assaulted by another change. Each new vegetable should be

tried in the same way. If necessary, when a baby continuously refuses to like vegetables, it may be advisable to camouflage a small amount of them in his cereal or milk. Then, by gradually increasing the proportion of vegetable and by decreasing that of the cereal the trick of making the baby like vegetables is accomplished.

After the child has been taught to like vegetables the introduction of soup is usually easy. The first soup should be a thick puree, not dissimilar in taste to the vegetable he has been eating.

Following this, of course, many other new foods may be added as desired. In my experience, if the previously outlined technique has been followed and our standpat baby has thus become accustomed to a varied diet, no further difficulty is likely to be experienced because of the factor of change in taste. He may actually dislike certain foods, however. There is no accounting for some peculiarities of taste. If he eats a good variety and simply will not be reconciled to one or two kinds, it is best to respect this whim of his appetite and erase them from his diet list.

Prevention of Overfeeding

If we are to develop good appetites we must be careful not to overfeed the nursling. Appetite,

like any other faculty, will be made more keen by its exercise. Except in extreme cases no increase in formula should be made unless the child is completely draining each bottle. Failure to gain weight satisfactorily when combined with poor appetite in a very young infant means that there is something wrong with the baby or with the food. It should call for increase in formula only after careful consideration of these probabilities.

The baby who is making an average gain in weight should not have an increase in food unless he is ravenously hungry. Then an attempt should be made merely to take the edge off of this appetite.

It must be emphasized that mere size in a baby is a minor indication of health. Mothers must understand that steady gain in weight is much more to be desired than rapid gain, and that a small baby may be physically superior to his fat neighbor.

Treatment of the First Attack of Anorexia

Treatment of the first attack of anorexia is an important part of the prevention of habitual poor appetite and is almost always necessary during the first year. The subject has already been touched upon and it is necessary only to state

that when a previously hungry baby first refuses food our response should be a marked reduction in the amount offered him. On no account should he be forced or urged to eat at this time. Following this symptom we should anticipate a minor illness.

If this rule is followed there will be no children who have poor appetites because we have forced food upon them at a time when they were physically unfit to assimilate it and therefore had an aversion for it.

It will be seen that the prophylactic methods advised up to this time have been very definite and concrete. They are applicable to all babies and should tend to produce good appetite in the year old child. These measures applicable to the young baby are simple ones because appetite here is more influenced by hunger than is the case later on. Psychologic factors gradually increase in importance as the baby grows older and appetite becomes the controlling factor in the amount of food eaten. Therefore, the following methods of prevention in the child older than one year will be more psychologic than physiologic.

Parents to Read Psychology

At this time, if they have not done so before, all parents should certainly begin to read something of child psychology. It should be explained

to all parents that most of the problems encountered in the second year will be psychologic rather than physiologic. They should be reminded that little is gained in giving a child a sound body unless this is controlled by a stable nervous system. This reading is a real preventive step, because thereby parents gain an insight into the child's attitude of mind which makes the development of anorexia less likely. It also enables them to recognize its earliest manifestation as of some importance and the physician may thus be given a chance to use his judgment early enough to obtain quick results.

Prescribing of No "Caloric" Diets

It is considered inadvisable to prescribe definite amounts of food to a child over one year of age. If the previous technique has been successfully carried out we may confidently allow appetite to guide the healthy child in the amount of food he eats.

Some will say this is not scientific, that the child will either eat too much or too little. On the contrary, I believe this the most scientific way to feed a baby over one year of age, and experience has taught that they eat sufficient food if let alone. Proof of this assertion will be presented later. In this connection a word might be said about scientific methods of feeding.

In considering a problem, the man of truly scientific mind takes into consideration all of the possible factors bearing upon it. If he neglects to consider one source of error in an experiment he knows that his results will be worthless. In this question of how much a child should eat, there are two or three sources of error which cannot at the present time be estimated. Therefore no one can calculate just how much any given child of a certain age, height, and weight should eat in order to gain properly. True, one can average the number of calories found adequate in a large group of children and make an estimate based on this average. This, however, while it affords a rough guess as to the amount necessary for a given child, does not take into consideration the unknown factors in the particular child. He may and probably will need more or less than the average. It is as though I should attempt to estimate the number of gallons of gasoline it would take to run my automobile a given distance by averaging the miles per gallon of one hundred different makes of cars. If mine happened to be a six miles to the gallon car, I would be out of luck on the trip.

Children vary at least thirty or forty per cent. in their caloric needs. How can one tell the needs of any given child in the face of this unknown variable? Many who claim to feed chil-

dren scientifically attempt to estimate this need on the basis of average caloric requirements. Since this method is bound to result in errors, is it not more scientific to try to develop that infinitely delicate gauge of caloric requirements with which nature has supplied us, good appetite? As to the practicability of this method, the following experimental data bear witness. The element of forced feeding is best eliminated by avoiding those diet lists which prescribe set amounts of food. The child with a good appetite should be allowed to eat as much as he will of the food we choose to set before him. Needless to say, our selection should be carefully made. The last chapter will deal with the child who has no appetite.

Technique of the Meal

All that has previously been said about the surroundings and conduct of the meals applies in prevention. It is useless to repeat. We must be continually on the alert to avoid sources of discord which are likely to arise. We must zealously and continually guard children's appetites. Look out for the new nurse or cook and educate her in your methods. It is better to lose a nurse than an appetite.

In closing this chapter it is worthwhile to present proofs of the safety and therapeutic sound-

ness of this teaching, as the proof of the pudding is here particularly dependent on the eating.

The Experimental Group

About five years ago, impressed with the seeming futility of trying to treat these cases when their number was increasing much more rapidly than were the cures, I began to try prevention. The foregoing plan, or its embryo, was outlined and some pains were taken in the details of its management. As time went on I began to notice a decided reduction in the number of children in my practice who presented the eating problem. In order to check up on the results, a questionnaire was mailed to over 200 mothers. Only those babies whose feeding I had supervised from the first few weeks of infancy until the present time were included. They were chosen as they came from my files without regard to any other factors than the time at which I had first seen the child and the fact that I was still caring for him. The mothers were asked to state whether their children ate hungrily, willingly, reluctantly, or with aversion for food, and were requested to give the weight and age. One hundred and ninety-nine replies were received and the data given were tabulated as shown in Table I. This shows that 85 per cent. of these children had good eating habits (hungrily or willingly), that

only 15 per cent. were reluctant eaters and that none had developed aversion for food. Not one in the entire group habitually or commonly vomited his meals. And the average weight was 3.6 pounds above what is considered normal for their age. The ages of these children varied from one and one-half to six years. I consider this adequate proof that it is safe to use the preventive methods outlined, and believe it indicates that appetite is still an accurate gauge for indicating the amount of food a child should eat. Until I am shown some more accurate man-made method of estimating the required calories I shall continue to use this physiologic one.

Not long ago a mother came in, and before she sat down said, "I want to know how many calories a day my boy should eat." I replied, "I haven't the slightest idea. I am accustomed to give food, not calories to children." In this case the idea took root. Her face, at first disappointed, began to brighten up. Her boy was very much improved by the change in atmosphere at meals. He has made a normal gain ever since, and at school is considered a "regular fellow" rather than a problem child.

For the benefit of those who are interested in statistics I am including Table II, a study of the underweight children in this group, and Table III, a summary of those who did not eat well.

This work has previously been reported in Mental Hygiene,[1] to which article I will refer those interested in the details. Suffice it to say that in the entire group none were appreciably underweight because of poor appetite only. All those who were materially underweight with poor appetites were sufferers from definite chronic physical disease.

It must be considered that this effort was begun during the period of enthusiasm for high caloric feedings, and was therefore considered heretical. It must be remembered that it was carried out in the midst of routine practice and that the technique was enlarged upon and improved as I went along. It will then be realized that it is not beyond reason to conclude that under more ideal conditions this 85 per cent. of children who ate well might be increased to almost 100 per cent. Only then will we have approximated the ideal achievement outlined in our second chapter.

Here I want to take the opportunity to say that I am advocating confidence in appetite as the gauge only in physically normal children. If a child has a definite organic disease it is a matter of the physician's judgment in that particular instance whether or not food is to be urged. We are speaking here of the great rank and file of poor eaters.

[1] Aldrich, C. A.: The Prevention of Poor Appetite in Children. Mental Hygiene. Vol. x, No. 4, p. 701 (October), 1926.

TABLE I

THE ENTIRE GROUP

Age Period	*No. of Cases*	*Hungrily*	*Willingly*	*Reluctantly*	*Aversion*	*No. Under Weight*	*Average Pounds Overw't*
18 mo.-2 yr.	43	19	21	3	0	1	3.8
2-3	56	18	29	9	0	2	3.8
3-4	43	16	22	5	0	3	3.7
4-5	33	6	18	9	0	8	3.0
5-6	24	12	8	4	0	7	3.7
Totals	199	71	98	30	0	21	
% (approx.)		35.5	49	15	0	10	3.61 lbs.

TABLE II

UNDERWEIGHT CHILDREN

Case No.	*Lbs. Under-Weight*	*Appetite*	*Comment*
19	1	R	Congenital heart disease
51	1	H	Premature baby
63	3	R	
120	3	R	Recurrent vomiting
125	2	W	
130	3	H	Premature baby
146	2	W	
148	2	H	
152	3	R	Celiac disease
158	3	W	
163	2	W	Chronic pyelitis
167	5	R	Chronic pyelitis
168	2	W	Chronic pyelitis
173	1	W	
180	6	W	Chronic tonsillitis with hypertrophy
187	3	R	Chronic tonsillitis with hypertrophy
191	1	R	
192	1	R	
195	6	R	Chronic tonsillitis with hypertrophy
197	4	H	
198	4	W	

H—Hungrily
R—Reluctantly
W—Willingly

TABLE III

THE RELUCTANT FEEDERS

Case No.	*Age*	*Lbs. Under-Weight*	*Lbs. Over-Weight*	*Comment*
19	1	1	..	Congenital heart disease
24	1	..	1	
42	1	..	1	
49	2	..	6	
52	2	..	3	
56	2	..	2	
57	2	..	2	
63	2	3	..	
70	2	..	3	
86	2	..	2	
90	2	..	5	
91	2	..	5	
106	3	..	4	
115	3	0	0	
120	3	3	..	Recurrent vomiting
138	3	0	0	
139	3	0	0	Chronic pyelitis
142	4	..	9	
144	4	..	2	
151	4	..	2	
152	4	3	..	Celiac disease
154	4	0	0	
156	4	..	5	
164	4	0	0	Congenital spastic paralysis
167	4	5	..	Pyelitis
170	4	..	3	Chronic tonsillitis with hypertrophy
187	5	..	3	Chronic tonsillitis with hypertrophy
191	5	1	..	
192	6	1	..	
195	6	6	..	Chronic tonsillitis with hypertrophy

CHAPTER X

THE TREATMENT OF THE ESTABLISHED CASE

Since successful treatment of the child with chronic lack of appetite is so difficult, emphasis up to this point has been laid on prevention. There are, however, many children in every community who are severely undernourished from this cause, and who need treatment. The percentage of cures seen in this sort of case has not been so great that I can attack the problem with the same confidence displayed in the previous chapter. Yet, thinking back over the successes and failures, there seem to be enough of the former to justify outlining those procedures which seemed most beneficial.

Many of the failures were due to my inability to "sell" the parents on the idea that *appetite in itself was a worth while end* for which to strive. In many instances, after carefully telling people not to expect results before a period of weeks or months had elapsed, they reported failure after but a day or so of trial.

Treatment of the Nursling

Treatment of established anorexia naturally divides itself into the management of those children under and over one year of age. In the younger group we are dealing for the most part with children who eat mainly under the stimulus of hunger. As they get older, and certainly after the first year, appetite takes on the leading rôle in establishing the amount of food to be eaten.

It is much easier to be successful in treating infants under one year of age. They have not been feeding problems so long, and therefore the psychologic influences at work have not grooved their minds so deeply. Moreover, the anorexia in these nurslings is often due to improper feeding. It may be that they have been getting too much of some article in the diet, or that they have a food idiosyncrasy. Since the number of articles in the dietary of a child of this age is relatively small, it is easier to locate the trouble, and thus to restore good eating habits quickly.

If overfeeding is the cause, some simple method such as removal of the cream from the milk may be all that is necessary. In doubtful cases the use of skimmed milk should be tried early.

The keynote of treatment at this age is *reduc-*

tion of food, either in the elimination of a specially incompatible food, or in a decrease of the entire dietary. The amount of reduction to be made in the diet will vary with the case and its cause. In some instances a short preliminary period of starvation or its equivalent, barley water feeding, may be thought advisable. In some, dilution of the milk one-half or one-third with water may be all that is necessary. Many times it is best at the onset to offer in the bottle a little less food than the baby has previously been taking willingly. As soon as these methods bring out signs of appetite the food allowance may be gradually increased, always being careful that each meal is terminated before the child begins to push the food away.

Such instances occur almost daily. Last week I saw a ten months old baby who had been refusing the bottle for two months although he took all spoon feedings well. He had lost one-half pound in the last month. When I asked how much he took willingly from the bottle, his mother said, "about two ounces." We discontinued spoon feedings temporarily and offered him only two ounces in each bottle every four hours. The response was almost more than the mother could stand. On the first day he drained each bottle and looked about for more. On the second he

took three ounces at each feeding and *yelled* for more. Within a week he was hungrily taking six ounces five times a day. Spoon feedings were then reëstablished and the appetite problem was gone. Rarely can so prompt a result be obtained in an older child, however.

Seldom will such procedures fail in the infant. If reduction in the amount of food does not succeed, search should be made for possible obscure physical causes of the anorexia. These, if found, may suggest dietary or other forms of treatment. If the anorexia does not disappear with the removal of the physical cause, a diagnosis of psychologic aversion will probably be correct and some other appropriate method for overcoming this must be devised if we are not to perpetuate the trouble.

At one time I saw such a baby recovering from pyelitis. Lack of appetite had been pronounced from the onset of the disease and was getting progressively worse in spite of the fact that her fever had gone and the pyelitis was no longer active. Feedings had been gradually made more and more concentrated in the hope that the baby might thus be made to gain. This increase in the caloric value per ounce, however, had been met by an increasing anorexia, so that the child was

actually losing weight due to insufficient food. Alarmed by this, the physician had advised feeding by stomach tube. The problem in this child was met by feeding her diluted skimmed milk with the addition of a little sugar. The baby gained ten ounces during the first week of the skimmed milk régime. Here obviously, factors influencing both hunger and appetite were at work. The previous formula, rich in fat, was interfering with the hunger mechanism, and the struggles over the bottle had changed the developing appetite into an aversion for food. Treatment aimed solely at the hunger element in this six months old baby was successful. With the establishment of rapid emptying of the stomach and normal hunger contractions, she cried *for* instead of *at* the bottle, and this in spite of a well developed psychologic aversion.

Treatment of the Child Above One Year of Age

As in any other disorder a diagnosis as to the cause is necessary for rational treatment. The following brief and probably incomplete outline of the causes of chronic anorexia is attempted in order to give an idea of the variety of factors which must be considered. I have tried to arrange these roughly in order of importance.

The Causes of Poor Appetite

I. *Psychological causes:*

A. In the Child.

a. Negativism
b. Desire for attention
c. Attempt to obtain desires
d. Interest in other things
e. Desire to go out and play
f. Imitative nature

B. In Attendants.

a. Multiplicity of methods used
b. Too many attendants, each with a different method
c. Wrong methods in general psychologic handling
d. Lack of education or purpose—haphazard methods

C. In the Technique of the Meal.

a. Forced feeding
b. Oversolicitous, hovering attitude
c. Too much talk about eating habits
d. Too much discipline, especially stressing of manners
e. Emotional strain at the table or before eating
f. Story telling or other stunts as a reward for eating
g. Unpleasant surroundings at meals
h. Too much time allowed at meals

II. *Physical causes:*

A. Disease Processes.

a. Infections—practically all acute and chronic ones
b. Organic disease—especially of heart, lungs, and kidneys
c. Teething
d. Anemia
e. Disturbances of function—endocrine glands, cœliac disease, secretory and motor abnormalities of the stomach
f. Mental disease
g. Malignant tumors

B. Hygienic causes.
a. Lack of fresh air
b. Lack of exercise
c. Lack of sunlight
d. Lack of sleep

C. Dietary causes.
a. Overfeeding—general or with any one food, as milk
b. Too short intervals between meals—eating between meals
c. Too much of foods rich in fats
d. Lack of vitamines
e. Food idiosyncrasy
f. Constipating diet
g. Too much sweet or starchy foods

Importance of the History

It is not always necessary however to wade through so many details in order to make a diagnosis as to the cause of anorexia. The history of the case often leads one abruptly to the diagnosis.

I wish there were time to recite here a long list of these histories. Responses to the query as to what happened when the anorexia was first noticed are interesting and important from the standpoint of treatment. It is easy to find the cause in the infant who refuses to be shifted from the breast to the bottle, but it will not be so easy to recognize this factor if this child is first brought to the doctor at the age of five years. Yet in a large percentage of cases symptoms of anorexia may be traced back definitely to this weaning period. Having obtained such a history, we know that we are dealing with some sort of psychologic refusal of food resulting from feeding mistakes in babyhood. In some the onset coincides with a change of nurse, in some with the advent of a new baby in the household, in some with the institution of spoon feeding. The common factor in all is that from this time on feeding has been difficult. The cases vary in the amount of reduction of the appetite and in the duration of the symptoms of anorexia.

Physical Causes

The treatment of the first group of physical causes, those due to disease processes, can be dismissed with a few words. No case of anorexia should be treated in any way until a thorough his-

tory and physical examination has been made. If a physical defect is found which is considered adequate to diminish appetite, this should of course be treated at once.

I do not like to spend much time in the discussion of an almost purely medical subject, but since it has a definite bearing on the question I may be excused for interpolating a few remarks on the indications for treatment of physical disease.

Poor appetite should not be considered an indication for taking out tonsils and adenoids simply because they are present. (See page 79.) In my experience no permanent relief of the symptom may be expected to result unless there is evidence, either in the appearance of the tonsils or in the history of the case, that they are diseased. It takes definitely diseased or tremendously enlarged tonsils and adenoids to cause, in themselves, a chronic poor appetite. The adenoids are probably more important than the tonsils in this connection. Removal of diseased tonsils and adenoids may cure anorexia. Removal of normal tonsils and adenoids usually results in a *temporary* improvement in appetite following the operation simply because the child has been starved for a day or two before much food is offered him.

Likewise, with any other evident disease, it is well to consider carefully its severity before coming to the conclusion that it alone causes anorexia. Treat the disease, but do not forget that psychic factors may also be at work.

Even in the presence of physical disease the intelligent use of psychotherapy may be of use. It is conceivable that the child suffering from tuberculosis may eat more if the rules governing the technique of the meal are followed. He will certainly eat more food if he is not unduly forced in a tactless way.

Hygienic Causes

The methods of treating the hygienic causes hardly need much elaboration. Children need outdoor life, plenty of exercise and sleep. Neglect of these matters may in exceptional cases cause trouble. After strenuous play it is well to allow a few moments of rest before the meal is announced. This will allow time for hunger contractions to begin so that the eating reflex may be properly initiated.

It is frequently advisable to put the tired child at rest in bed as a preliminary to any treatment. This manoeuver is valuable as it not only removes fatigue and makes him physically more likely to have an appetite, but it also makes meals a pleas-

ant diversion in the day's routine instead of an unpleasant interruption of play.

Dietary Causes

It is necessary to say more about treatment of the dietary causes of anorexia. These may not be the primary or sole factors causing the condition, yet removal of them may be of value in reinforcing hunger and appetite so that they function in spite of psychologic factors acting against the reflex. In treating any case all of the factors noted in the outline should be carefully considered.

In general, a rather low caloric diet, especially poor in fat content, will tend to increase hunger waves. I have seen more immediate and brilliant results follow the reduction or elimination of milk from the diet than from any other dietary measure. Many times it has seemed as though, in the presence of too much milk, the child was in a continual state of satiation and therefore had no appetite. As soon as the milk was eliminated hunger and appetite were at once felt. (See pages 38, 65, 67.) This has happened so many times that I feel it should be tried often. Results if obtained will be noticed in a few days. If it is considered inadvisable to eliminate milk entirely, skimming off the cream may act as well. Many

babies and older children will not eat hungrily so long as they are given a large amount of butter fat. One of these two methods can safely be tried as a pure experiment in any case. If results do not appear within one week, they will not come later.

Particular attention should be paid to the question of between-meal feeding. This should not be permitted in the child with a poor appetite. For him especially, a long interval should intervene between all meals. This means a fairly early breakfast, a noon luncheon, and supper at five or six in the evening.

Fried foods should be rigorously eliminated from the diet of the poor eater. They will only embarrass an already reduced digestive power and prevent early emptying of the stomach.

Fresh fruits, vegetables, meats, and broths should be offered because of their vitamine content as well as for their direct stimulating effect upon appetite. Bananas, if very ripe, are good food for most children. One must be careful in the manner in which they are given, however. At first, the forbidden fruit is accepted with glee, but as soon as the child learns that you really wish to have him eat them he is likely to lose his taste for bananas. If they are given reluctantly each time it is quite possible to make the feeding of

bananas a considerable help in nourishing a child during the educational period in which you are trying to bring back his appetite.

Food idiosyncrasy has not been given its proper place in previous discussions of this problem. Idiosyncrasy may be a matter of taste. In that event a child just naturally does not like an article of food. Possibly he cannot learn to like it. Persistence in feeding such a food may result in poor appetite on a psychologic basis. Idiosyncrasy may be a matter of poor digestion. In this case, the offending food causes digestive disorders which ruin the appetite. In the first instance no difficulty in diagnosis is presented. The child lets us know what he does not like. In the second instance considerable difficulty may be experienced in finding the offending food. Eggs, cream, meat, vegetables, and berries most commonly cause trouble. In some instances, however, seemingly innocuous foods may be at fault.

Constipation, while a rare sole cause of anorexia, may be a frequent contributory one. If dietary measures are not successful in its treatment, it is permissible to resort temporarily to the milder laxatives. This is done in the hope that with improvement in the appetite and subsequent increase in the amount of food eaten, the constipation may be relieved.

Psychologic Factors

Having considered all the physical causes in the child with poor appetite, and having obtained a definite history as to the probable psychologic factors, what shall we do about these? It would be impossible to detail the proper method to use in every possible instance because no two of them are alike.

I am reminded of a remark one of my instructors in medical school made to our class. He said, "We are not trying to detail a list of treatments so that all you have to do in a given case is to look in the book and find the answer. We are interested, however, in teaching broad principles which will enable you to use your brains intelligently in prescribing treatment." So here it is impossible to prescribe routine treatments for all of the conditions which are likely to arise, but I am trying to show how a diagnosis as to underlying faults may help people of intelligence so to use their brains as to *reëducate appetites into* these children.

Look over the partial list of psychologic causes (page 108); see if any of them apply. If not, are there others that can be thought of which may give a clue as to the difficulty? See to it that all the attendants at the meal are instructed as to

its proper management. Assure yourself that they are intelligently informed as to the psychologic tendency of children which makes them naturally rebel at eating if it becomes a duty.

It remains to suggest some methods for treating the elements in the child himself which cause anorexia. Before attempting any psychologic treatment at all it is necessary to have in mind one or two general principles. If these are not remembered it is best to go on in the old way and trust in nature to assert herself sooner or later.

We must think only in terms of appetite. No success can be expected unless everybody in contact with the child temporarily *forgets the subjects of food intake and gain in weight.* Just as in adult life we often give up pleasures of the present in order to secure greater ones later on, so here we have to forget the food intake of today in order to make sure of that of the future. Secondly, it must be clearly understood that psychologic cure is impossible in a short period of time. It has taken the child many months or years to get into the present condition. He will not snap out of it over night. If appetite is completely restored in several months we may be fortunate.

The most important part of the cure of the child lies in the education of his parents and of those who take care of him. Perhaps neglect in

attending to this more than anything else has been responsible for the failures I have had. It is difficult for a physician to attend to this education. He sees and talks only to mother and nurse. Often other members of the household who are not instructed may, in a word or two, spoil all the good that physician, mother, and nurse can do in weeks of patient effort. A family party in which the doctor can explain his treatment should be a preliminary to any attempt to cure this sort of case. In this regard the psychiatric worker has been far ahead of the physician.

Treatment of Negativism

Negativism is a frequent cause of poor eating habits. It is extremely easy to diagnose since it usually manifests itself in the child's reactions to other things as well as to food. This type of child does not like to do anything he is made or requested to do. One soon learns that the best way to get such a child to open his mouth is to say, "keep your mouth closed tight." If it is desired that he take a deep breath, it is best to say, "don't breathe so deeply." His first reaction to any command or request is an act in the opposite direction from that desired.

The obvious way to get results in such a child is to tell him he must not eat so much. This may

or may not be good treatment from the standpoint of his negativism, but it often works quickly in changing his mental reaction toward food. If he thinks he is being restrained at meals, such a child is much more anxious to eat. His appetite is thereby stimulated.

I called one day on such a child. She was not sick but she "hadn't eaten well for months." On my arrival I found the nursegirl and child seated before a large meal on a tea cart. The nurse was wiping away her tears as she pleaded with the child to eat. The mother would be in shortly she said. Physical examination showed nothing abnormal, but it happened that the child was a pound or two above the average weight. Just as I had finished this examination her mother came in. She wanted to find out what was the matter with her child before she went out to luncheon. I pointed out to her the various mistakes that were being made in the conduct of meals and explained some of the psychologic factors involved in the child's attitude toward them as well as in her reactions to other every day happenings. In closing she was told that there was nothing to fear, that the child was above the average weight and that I recommend she be given a very much restricted diet, so that her appetite might have a chance to develop. The

portions were to be made ridiculously small for one week. She was not to have any second helpings and it was requested that the mother report results at the end of that time.

This was the report. "Doctor, I'll have to admit we couldn't carry out your orders. She screamed so hard for more food that we just had to give it to her." "Well," I said, "that's not so bad then. She is nearly cured of her appetite problem." "Oh!" said the mother, "I thought my girl was overweight and you were trying to reduce her." The psychologic atmosphere in this case was perfect and the result was perfect. If I had not carelessly allowed the mother to realize the misunderstanding between us it would not be necessary to add the anticlimax. When told it was not necessary to reduce the child, the nurse soon slipped back into her old ways of forcing food, and according to the last rumor the child was still being forced to eat.

What can we do to create the proper atmosphere about meals? All mothers and nurses cannot be fooled as I inadvertently did this one. We must try to educate them.

What tricks can we play on the child to make him realize the desirability of eating? Reduction of all portions to a ridiculous minimum with refusal of second helpings is often successful. Another method is the restriction of some desired

food, as milk. Taking food away from him is another. Limiting the time to be spent at the table sometimes helps.

In some instances the following instructions to the mother or father have been given. The parent is told to appear at all meals shortly after the child has sat down to eat, to make serious objection to the amount he is eating, to take the food into the kitchen and to scold the cook for giving him so large a helping. The nurse is to be told that he has eaten too much already, that she should take him down from the table and never again repeat the offense. The greater the scene, the more likely is the child to appreciate that food is desirable. In most instances the child immediately begins to call for the food taken from him.

Similarly an alarm clock sometimes helps. Set the stage so that there is nothing and no one in the room except the table, chair, all courses of the meal, and an alarm clock set for ten or fifteen minutes. Seat the child at the table and leave. On no condition enter the room until the bell rings. Then go in briskly, remove the dishes and send the child out to play or to bed with no comment whatever about the meal. I knew one child to gain eight pounds in six weeks on the alarm clock régime.

It will be observed that in these manoeuvers

we demonstrate by action the fact that it is difficult to procure enough to eat. Actions always speak louder than words, especially to children. Not only must we stop forcing food upon them but we should apply some of these definite measures to show them the difficulty of getting food. Such lessons are the most valuable ones that can be given to the negativistic child who will not eat. Our treatment must be constructive as well as corrective.

A little while ago I met a child under the following circumstances. As I came in the mother was trying to drag him downstairs to see the doctor. He had not eaten anything for I have forgotten how long. I said, "Don't bring him down here." The mother and I talked for quite a while with the child in a sulk half way up the stairs. From the story a diagnosis of negativism was quite apparent. When his mother said, "Go up to your room," he immediately came downstairs and said he wanted to see the doctor. I looked him all over and was able to make a very good examination by telling him to do all the things I did not want him to do. Then I said, "Young man, I am going to tell you something you won't like. You can't eat so much; you can't have any second helpings; can't have any milk at all and I've told your mother not to put as much food

on your plate as she has been giving you." This provoked a veritable storm. He'd show me he could eat all he wanted to and could have all the milk he wanted. This child is now cleaning up every plate at every meal. Within two days he began to want the food he "couldn't have."

The ultimate treatment of negativism I leave to the psychiatrists but from the standpoint of appetite such methods may be necessary. This theoretically questionable procedure is justifiable in many exigencies and is often startling in its immediate effect upon appetite. Of course I feel that the parents of such children should be informed of the existence of negativism so that later on this can be treated.

Such measures must be persisted in for a long time so that the child develops a fixed memory of food as a difficult and desirable thing to obtain. Not until then can we say that we have educated an appetite into him. In the length of time required to produce a permanent cure lies its chief difficulty. Many times it is necessary to try more than one of these methods in order to produce the desired effect. There is plenty of room for the exercise of ingenuity. What I am trying to emphasize is the value of prolonged use of some measure which will make the child see that it is difficult to get food. All the other elements

in the proper technique of the meal should also apply here. Except in temporary reduction of food, dietary measures in this type of case are of minor importance.

Desire to be Important

In order to produce a cure in the child who uses refusal of food as a means of becoming important, it is also possible to take advantage of the very factor which causes the difficulty. When he does eat, make him so important that eating is a real incentive. Pay no attention to poor eating, and in paying no attention to this be very careful that the child does not realize that you are secretly worried. Children are astute in their diagnosis of adults. One has to guard every word and look. Sometimes this treatment almost amounts to "kidding them into eating". Give the child only a teaspoonful of cereal and then talk all the rest of the day about how wonderfully he cleaned up his plate and how much he is eating. Tell his Daddy about it.

It often happens that there is a hidden factor in this kind of child which must not be overlooked. One day while looking over a new baby, home only a few weeks from the hospital, I was asked to see what was the matter with the older child who recently had refused all food. Inquiry

brought out the fact that this refusal dated from the baby's arrival into the home. Obviously, the treatment of this child required special methods. The three-year-old had to be made to feel that she was a part of the baby's triumph, that she shared in the mother's ownership of the baby and that she was therefore more important than the baby. Treatment at meal time alone could not cure this case.

In another instance the difficulty had its onset with the coming of a new nurse. Perhaps the child felt the need of impressing this stranger with her individuality and so she did not eat.

So many different factors are likely to come up in a consideration of this type of child that it is hopeless to try to enumerate them. It is most important, however, that this question be asked, "What happened at the time we first noticed she didn't eat?" In that way only is it possible to arrive at any illuminating facts as to the underlying cause.

Attempt To Obtain Favors

Where a child definitely tries to obtain favors by rewarding us with eating, where he holds the "big stick" of refusal over our heads, the rational course to pursue is to show him that it does not work. Let him clearly understand that

you do not care whether or not he ever eats another mouthful. It is a small matter in your life. The doctor says it is all right if he does not want to eat. He is the loser, not you. But, and this is not by way of punishment, if he does not eat enough to keep body and soul together, he will have to stay in bed because he will not be strong enough to get around. In this method of treatment he not only gets no favors but he loses his liberty. The incentive for refusal is removed.

In the foregoing treatment of these rather obvious factors in the child which lead to his poor appetite, I am oftentimes sympathetic with the child's attitude. This method of treatment is not based on ridicule of his feelings. I am simply pointing out the natural and obvious treatment from the appetite standpoint.

It is fully realized that in many instances the child may be right in his desires. He may be justly and hungrily desirous of attention that is not given him in proper amounts. Maybe he wants the attention of his mother who leaves him too much in the care of a nurse he does not like. Perhaps refusing to eat is the only way he has found to satisfy this longing. In many instances where there is too strict a discipline in the family, he too feels the need of having his own way. By

accident he has learned that refusing to eat is a potent method by which he can obtain his desires.

Often the demands of these children are not wrong but it is only the method by which they seek to gain their point which has produced the appetite problem. This method, since it is harmful to the child, must be made unattractive to him. Emphasis must be placed on the fact that it is often well "to take a tip" from the symptom and to see if something cannot be done so that the child will not need to use such drastic and unnatural methods.

Let us not be stingy with our brains. Most people are not so with money when their children need attention. It is easy to spend any amount for doctors' bills and prescriptions, but it is so hard for us to expend thought on our children's problems. Not only must we expend this mental energy freely but we must do it early, else we may expect to muddle about as heretofore. In order to be met most successfully these difficulties must be overcome before they have fully developed. Education of young parents affords the only method by which we may make possible the use of this most rational procedure, the application of our brains to prevention and early treatment.